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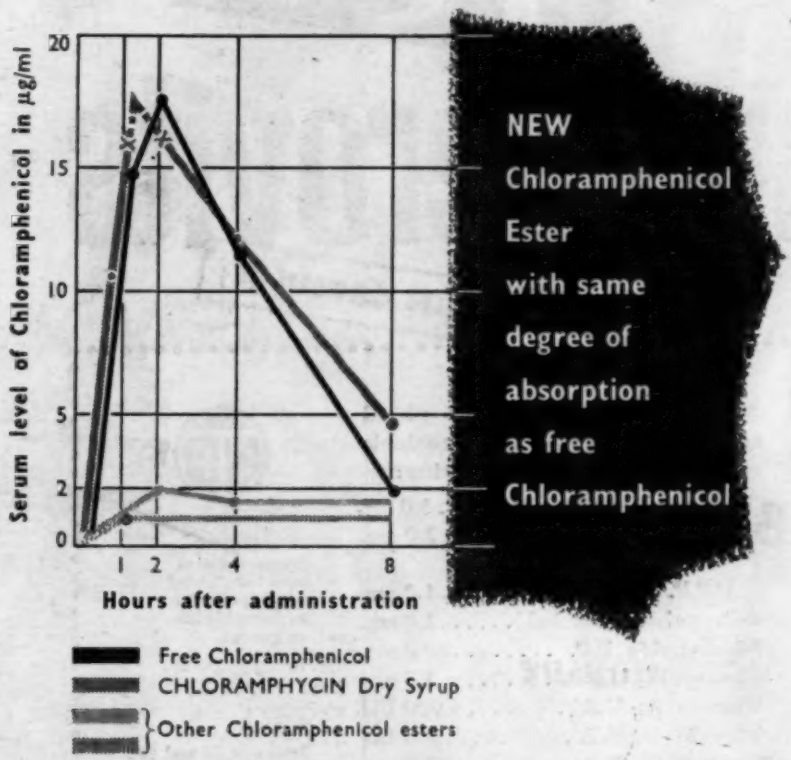

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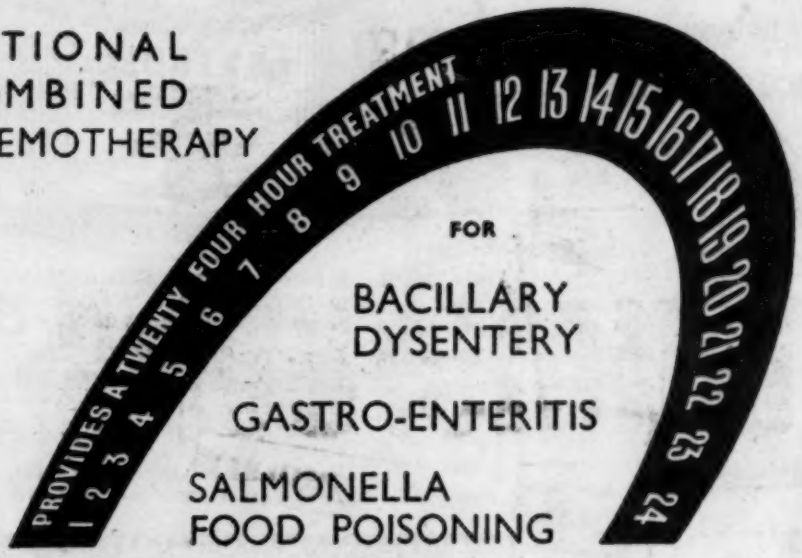

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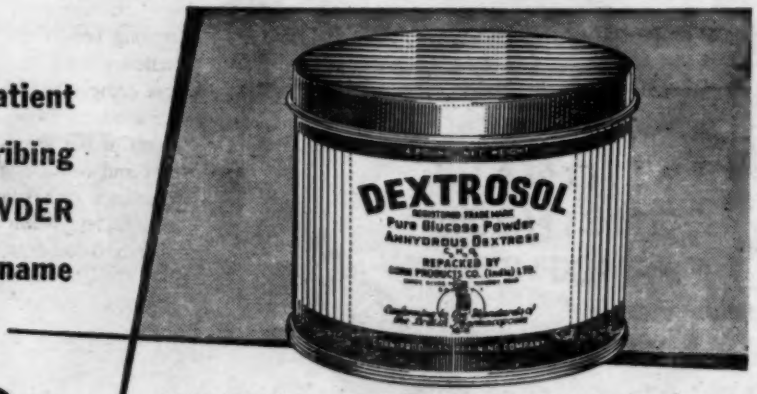

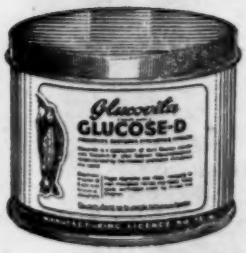

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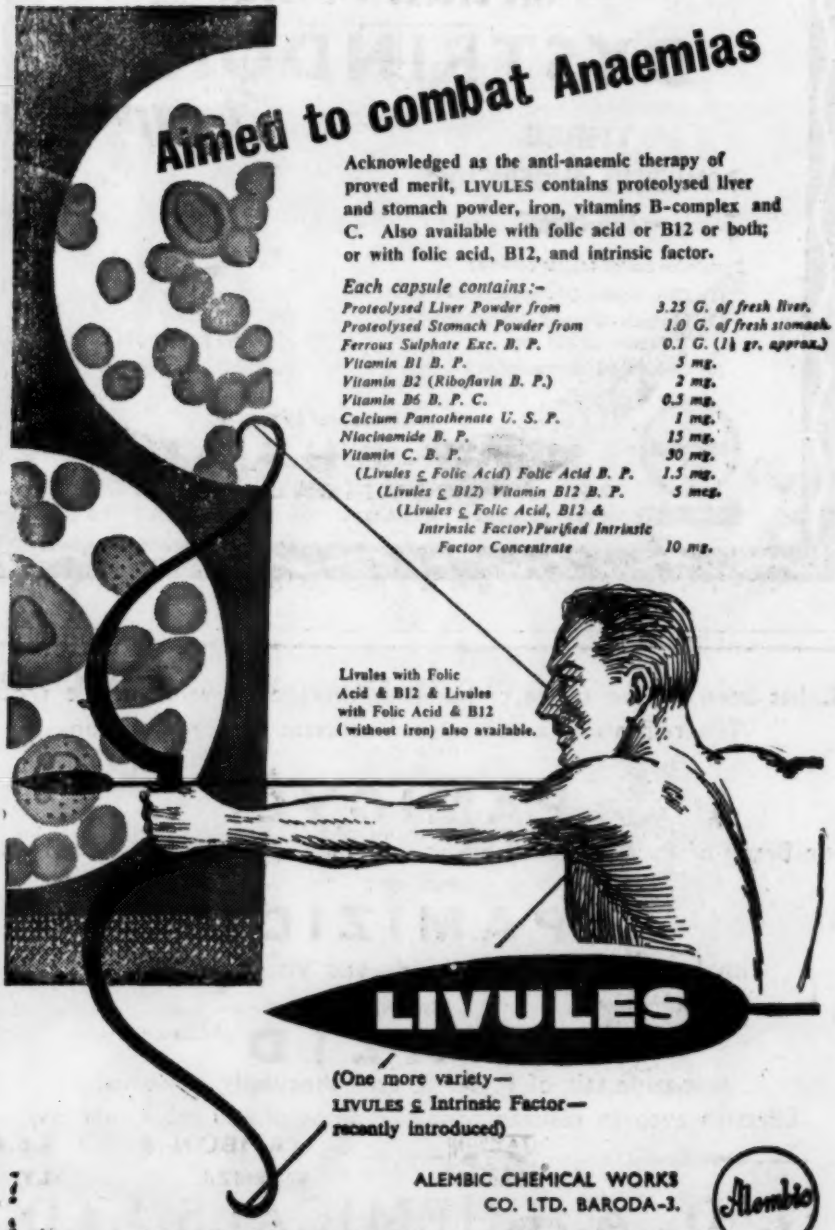

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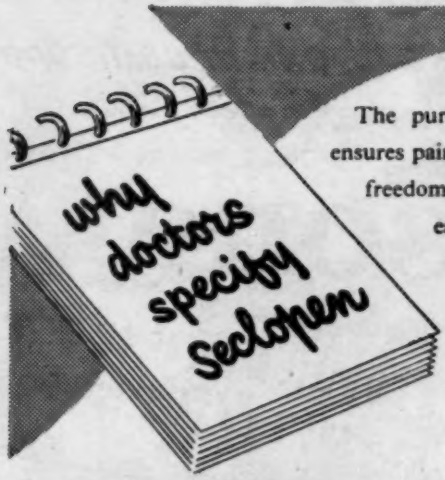

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ORIGINAL ARTICLES

OBSERVATIONS ON PORTAL CIRRHOSIS OF THE LIVER

With Special Reference to the Diagnosis of Early and Late Cases

NALINI RANJAN KONAR, M.D. (CAL.), M.R.C.P. (LOND.)

Professor of Medicine,
Nilratan Sircar Medical College, Calcutta

Cirrhosis of the liver is a common disease and the commonest type is the portal or Laennec's cirrhosis. The disease is usually first diagnosed when ascites has appeared or other evidences of portal hypertension are present. These are history of haematemesis and/or melaena, and presence of prominent veins in anterior abdominal wall and an enlarged spleen. Even at this stage it may be difficult to make a definite diagnosis on clinical grounds. But the disease is now too advanced to be cured or arrested and by therapy the life of the patient may at most be prolonged or made comfortable.

This investigation was carried out to note the diseases with which cirrhosis of the liver is usually confused, to use some of the investigations which may help in the diagnosis and to find out means by which the disease may be diagnosed at an early stage when therapy may arrest its progress.

During the three years period between August 1950 and July 1953, 70 patients were admitted in the Hospital under me as cases of portal cirrhosis of the liver. In 55 of them the diagnosis was confirmed after observation of the cases in the hospital and by carrying out various investigations. Of the remaining 15 cases, 5 were of nutritional oedema, two each of Banti's syndrome and congestive cardiac failure and one each of kala-azar, mitral stenosis, chronic constrictive pericarditis, malignant liver, tropical splenomegaly of unknown aetiology and tuberculous peritonitis.

On the other hand, three cases admitted as nutritional oedema and one each as kala-azar, infective hepatitis and tuberculous peritonitis were later found out to be suffering from cirrhosis of the liver. Thirteen cases of cirrhosis of the liver were observed in the Out-patients' Department. This brings the total in this series to 74.

The age distribution is shown in Table 1.

TABLE 1—SHOWING THE ANALYSIS OF AGE DISTRIBUTION OF THE CASES

Age in years	Number of cases
1 to 9	Nil
10 to 19	4
20 to 29	12
30 to 39	23
40 to 49	20
50 to 59	10
60 to 69	3
70 and above	2

The systolic blood pressure recording of the patients in this series varied from 130 to 85 mm. of Hg and the diastolic from 82 to 48 mm. of Hg. The average reading S/D was 102/71 mm. of Hg.

None of the patients had vascular spiders or caput medusae.

The total protein and albumin globulin ratio are shown in Table 2.

TABLE 2—SHOWING THE AMOUNT OF PROTEIN AND ITS FRACTIONS IN G. PER 100 ML. OF BLOOD

	Maximum	Minimum	Average
Total protein ...	7·50	3·58	6·02
Albumin ...	4·0	1·37	2·70
Globulin ...	4·67	1·75	3·32

We have been carrying out splenic venography since 1952 (Konar, 1952). In a normal splenic venogram the splenic vein, the extrahepatic portion of the portal vein and its intrahepatic tributaries are nicely made out even upto the periphery of the liver (Konar and Sen Gupta, 1953 ; Konar and Roy Choudhury, 1956).

In cirrhosis of the liver, depending on the degree of obstruction to and distortion of the intrahepatic branches of the portal vein, these veins are either not made out or are visualised only for a short distance inside the liver. The associated portal hypertension often makes the gastric veins and the inferior mesenteric vein visible due to reversal of blood flow through collateral channels. The splenic vein and the extrahepatic portion of the portal vein are dilated and the splenic vein is also tortuous.

Venous pressure was determined in a few cases of cirrhosis of the liver by the method of Taylor, *et al* (1930). With this procedure, the normal venous pressure varied between 6 and 12 cm. of blood, the average being 9 cm. (Konar, 1954). The average venous pressure in 18 cases of cirrhosis of the liver with ascites was 12·4 cm. of blood. Details are shown in Table 3.

TABLE 3—SHOWING VENOUS PRESSURE IN CIRRHOSIS OF LIVER

Venous pressure in cm. of blood	Number of cases
7	2
9	1
10	2
12	4
13	1
14	5
15	1
17	2

Diseases which caused difficulties in the diagnosis of cirrhosis of the liver in this series were nutritional oedema, Banti's syndrome, congestive cardiac failure, chronic kala-azar, mitral stenosis, chronic constrictive pericarditis, malignant liver, tropical splenomegaly and tuberculous peritonitis. The total protein, albumin and globulin content of blood in the nutritional oedema cases are shown in Table 4. There was not much rise in globulin.

In our cases of constrictive pericarditis the venous pressure varied between 22 and 30 cm. of blood (Konar, 1954). In cirrhosis of the liver it was never so high.

TABLE 4—SHOWING THE AMOUNT OF PROTEIN AND ITS FRACTIONS IN G. PER 100 ML. OF BLOOD OF PATIENTS SUFFERING FROM NUTRITIONAL OEDEMA

	Maximum	Minimum	Average
Total protein ...	6·69	2·62	4·86
Albumin ...	2·63	0·94	1·78
Globulin ...	4·08	1·31	3·08

EARLY DIAGNOSIS OF PORTAL CIRRHOSIS OF THE LIVER

It is known that cirrhosis of the liver may remain latent and the patient may die of some other disease. Still when the disease manifests itself, it would produce symptoms first and signs would appear later. With this view in mind we interrogated patients about the symptoms they had before the appearance of ascites. We knew that there were personal factors in giving the history. We further realised that it might be difficult to remember exactly what had happened previously. It was however surprising to note how fully and in detail the patients could narrate the history.

The initial symptoms of the disease were anorexia, flatulence, indigestion, heartburn, attacks of diarrhoea alternating with constipation, passage of loose stools containing mucus, occasional attacks of fever and pain over the right hypochondrium. The patients usually had several of the symptoms at one time. The time of onset of the symptoms before the appearance of ascites and the number of patients showing the symptoms in this series of 74 cases are shown in Table 5.

All the patients had ascites at the time of their admission in the hospital and they could give the approximate time of its appearance. It was also the most prominent symptom. Very few of them gave past history of haematemesis or melaena and these complications appeared later than ascites. Hence ascites was taken as the hallmark of established portal cirrhosis and it was

TABLE 5—SHOWING TIME THAT ELAPSED BETWEEN THE ONSET OF THE SYMPTOMS AND THE APPEARANCE OF ASCITES

Interval between onset of symptoms and appearance of ascites in months	No. of cases with				
	Anorexia	Flatulence Indigestion Heartburn	Diarrhoea Loose stools with mucus	Fever	Pain rt. hypochondrium
1	4	3	0	0	1
2	3	2	3	1	2
3	3	3	3	0	0
4	3	1	1	1	2
5	0	0	0	0	...
6	1	1	1	1	...
7	2	1	1	...	...
8	4	4	3	...	...
9	2	2	2	...	...
12	0	0	2	2	...
18	0	2	2	2	...
24	0	1	...	2	...
36	...	2	2	...	...
Total	22	22	20	9	5

possible to time other symptoms in relation to its appearance.

Anorexia was a common symptom. It was present throughout the day and appeared to be more marked towards the evening. In this series this symptom was present for one to nine months before the appearance of ascites. During this period the patients developed weakness.

Flatulence, indigestion and heartburn were also common symptoms. Flatulence was usually more marked towards the evening and at bed time and was more evident after fatty food. In some cases it was noticed for a month before the appearance of ascites but in others it was present even for three years.

Irregularity of bowels in the form of constipation and occasional attacks of diarrhoea was a common symptom. The diarrhoea was often associated with griping pain in the abdomen and passage of mucus.

Frank blood in stools was usually absent. Some of the patients had the urge for defaecation immediately after taking their meals.

A few patients suffered from bouts of fever which often responded to quinine.

Pain over the right hypochondrium was complained of by a few patients.

In addition to finding out the early symptoms, we tried to note the other contributory factors for cirrhosis of the liver in these cases. Malaria, malnutrition and amoebiasis are so common in our country that it is difficult to assess their importance in the causation of the disease. In 10 out of the 74 cases there was a history of intake of alcohol. The duration of addiction varied from 6 months to 25 years before the appearance of ascites. A few patients gave past history of kala-azar and infective hepatitis. The interval between the onset of these diseases and the appearance of ascites due to cirrhosis of the liver may be noted in Table 6.

TABLE 6—SHOWING PERIODS THAT ELAPSED BETWEEN THE ONSET OF THE DISEASE AND THE APPEARANCE OF ASCITES

Interval between onset of disease and appearance of ascites	No. of cases of kala-azar	No. of cases of infective hepatitis
1 month ...	...	...
2 months ...	...	1
3 „ ...	...	...
4 „ ...	...	...
5 „ ...	...	...
6 „ ...	...	1
7 „ ...	1	...
1 year ...	1	...
1½ years ...	1	...
2 „ ...	1	...
2½ „ ...	3	...
3 „ ...	2	...
4 „ ...	1	1
8 „ ...	...	1
Total ...	10	4

DISCUSSION

Cirrhosis of the liver is usually first diagnosed when ascites has appeared or there has been an episode of bleeding—haematemesis and/or melaena. This is a fairly advanced stage of the disease and very rarely its progress can be arrested. In order to do good to the patient, the disease should be diagnosed before those features are manifest.

In the early stage of the disease, it is likely that liver function tests will give abnormal results and liver biopsy and splenic venography will show abnormalities. But the difficulty lies in knowing which are the cases on whom those investigations have to be carried out.

A disease at its onset usually produces symptoms and signs appear later. This fact is also true for cirrhosis of the liver, though on rare

occasions the disease may remain latent and the patient dies of some other disease.

Ascites is a prominent symptom and sign of cirrhosis of the liver. Duration of other symptoms that the patients in this series had before the appearance of ascites varied from one month to three years.

Most of the patients suffering from established cirrhosis of the liver were middle aged persons and they usually had low blood pressure. History of alcoholism was present in only a few of them and a few others suffered previously from infective hepatitis and kala-azar. Even at this stage diagnosis of cirrhosis of the liver may not be easy. Needle biopsy of the liver may confirm the diagnosis. But there are obvious difficulties in carrying out the procedure in cases where the liver is hard and small and is ballotable due to ascites. Moreover, we presume that the small bit of liver tissue removed by the biopsy needle is representative of the whole liver. Further it has been noted that correlation is not always found between the clinical stage of the disease and the pathological changes seen in liver biopsy material. The procedure also does not throw any light about portal hypertension.

Splenic venogram, on the other hand, shows the picture of the portal venous system of the liver. The following changes have been noted in cirrhosis of the liver. Almost the constant finding is the absence of visualisation of the intrahepatic branches of the portal vein in advanced cirrhosis. In early cases the intrahepatic branches may be visible for a short distance inside the liver but not upto the periphery. The other findings are visualisation of collateral channels like short gastric, left gastric and inferior mesenteric veins and dilatation of the extrahepatic portion of portal vein and dilatation and tortuosity of the splenic vein. The changes depend on the stage of the disease, degree of portal hypertension and the extent of development of collateral circulation.

In conclusion, it is suggested that attention to the early symptoms of cirrhosis of the liver would help us in suspecting the disease. Liver function tests, liver biopsy and splenic venography may have to be carried out to confirm the diagnosis. If the disease is diagnosed at this stage, institution of proper therapy may prevent its progress to the stage at which it is often first diagnosed, when therapy is usually palliative.

Summary

Seventyfour cases of portal cirrhosis of the liver have been observed.

Changes found in splenic venograms in cases of cirrhosis of the liver have been described.

Attempts have been made to find out methods by which the disease may be diagnosed before the appearance of ascites or the incidence of gastro-intestinal bleeding.

Significance of the symptoms—anorexia, flatulence, indigestion, heartburn, diarrhoea, constipation, pain in right hypochondrium and occasional bouts of fever, in the early diagnosis of cirrhosis of the liver has been discussed.

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OBSERVATIONS ON FIFTY OPERATED CASES OF CHRONIC SPLENOMEGALY

A. K. BASU, M.S., F.R.C.S., F.A.C.S.

Director, Department of Surgery,
S. S. K. M. Hospital, Calcutta

A. DAS, M.B., M.R.C.S., M.R.C.P.

Professor of Medicine,
N. R. S. Medical College, Calcutta

AND

B. K. AIKAT, M.D., PH.D., D.C.P.

Director, Department of Pathology and Bacteriology,
S. S. K. M. Hospital, Calcutta

Introduction

Chronic splenomegaly is a fairly common clinical entity in our country. Besides the known aetiological factors such as protozoal infections etc., there occurs a group of cases whose aetiology and

pathogenesis are not apparent even after detailed investigation. Such cases are often complicated by progressive ill health, anaemia and hypoproteinaemia. In course of time, many of the cases develop cirrhosis of liver with ascites or other evidences of portal hypertension such as haematemesis or melaena.

During the course of the last 6 years, we have had a large number of such cases under our care and splenectomy (with splenorenal shunt in a small number of cases) was performed as a treatment of choice in a selected number.

Apart from the group of chronic splenomegaly, we have also performed splenectomy in a few cases, where on investigation, a definite aetiological factor was found and yet where splenectomy was considered to be the best method of treatment. This communication is based on our experiences and results of these cases subjected to operation.

Investigation

In addition to careful scrutiny of their past history particularly with regard to protozoal infections, jaundice, haematemesis, ascites, etc., and their response to treatment and also examination of their physical state—special investigations were carried out on the following lines:

(1) Haematological—Examination of the peripheral blood and bone marrow study.
(2) Biochemical—Examination of plasma proteins and liver function tests.
(3) Radiological—Oesophagogram and splenoportal venogram (Basu and Das, 1956).

Opportunity was taken at the time of operation to investigate the following:

(a) Macroscopic appearances of the spleen, liver and of the portal venous system including presence of collateral venous channels.
(b) Estimation of the portal venous pressure.
(c) Liver biopsy was taken at operation.

Subsequently the histology of the spleen and the liver from the biopsy material was studied.

Cases have been followed up and clinically evaluated and in some cases further haematological and radiological investigations have been carried out, during the follow up period.

Clinical Material

On the basis of above investigation, the cases could be classified into the following groups. Table 1 also gives the number of cases in each category.

Table 1—Showing Number of Cases in Each Category

(A) Chronic splenomegaly without cirrhosis or evidences of portal hypertension ...	15	cases
(B) Chronic splenomegaly with cirrhosis of the liver:		
(*i*) Diffuse hepatic fibrosis	19	,,
(*ii*) Postnecrotic scarring and nodular hyperplasia	5	,,
(C) Chronic splenomegaly due to extrahepatic obstruction	5	,,
(D) Cirrhosis of liver without significant splenomegaly:		
(*i*) Diffuse hepatic fibrosis	2	,,
(*ii*) Postnecrotic scarring with nodular hyperplasia of liver	2	,,
(E) Other diseases:		
(*i*) K. A.	1	,,
(*ii*) Cooley's anaemia	1	,,
Total ...	50	cases

Results of Investigations

The results of our investigations in the five groups are presented in Table 2. Only the essential features of the cases are mentioned.

Discussion

It would be seen that 39 of our 50 cases belonged to the group of chronic splenomegaly where no definite aetiological factor was apparent. Of these, 32 cases had history of previous intermittent fever in the past with enlargement of the spleen. The clinical characteristics of these febrile episodes suggested malarial attacks, which had ceased but had left a residual splenomegaly. Curiously enough, the residual splenogemaly had progressively increased even after the cessation of the bouts of fever and at the time of our investigation it was not possible to demonstrate any evidence of protozoal infection. Histological studies of the resected spleens did not show any specific type of lesion. However 19 cases showed appearances of fibrocongestive splenomegaly. This may reasonably be attributed to the later advent of cirrhosis of the liver, which might explain the further progressive enlargement of the residual splenomegaly after cessation of the febrile attacks. Further detailed studies to assess the role of hepatic damage in these types of splenomegalies are being carried out which will be reported on later.

Objective evidence of "hypersplenism" is controversial. In those cases, where progressive enlargement of the spleen could not be attributed to any known demonstrable aetiological factor and in whom chronic ill health anaemia, leucopenia and

TABLE 2—SHOWING THE RESULTS OF INVESTIGATION IN EACH GROUP

	No. of cases	CLINICAL FEATURES								LIVER FUNCTION						SPLENOPORTAL VENOGRAPHY					OPERATIVE FINDINGS								HISTOLOGY				
																					Appearance of liver			Portal pressure (mm. saline)					Liver			Spleen	
		P. H. suggestive of malaria	P. H. of K. A.	Splenomegaly	Jaundice	Haematemesis	Ascites	Hypersplenism	Not done	Normal	Slight dysfunction	Moderate dysfunction	Severe dysfunction	Oesophageal varix	Not done	Chronic splenomegaly pattern	Splenomegalic cirrhosis pattern	Cirrhosis pattern	Extrahepatic obstructive pattern	Normal	Generalised nodularity	Large nodules	Not done	Below 200	200—300	Above 300	Collaterals	Normal	Diffuse hepatic fibrosis	Postnecrotic scarring	Non-specific	Fibrocongestive	R.E. hyperplasia
(A) Chronic splenomegaly ...	15	12	2	Moderate 5 Massive 10	9		1	8	2	5		8		1	5	10				15			2	9	1	3		14	1		11	3	1
(B) Chronic splenomegaly with cirrhosis of liver																																
(1) Diffuse hepatic fibrosis	19	11	4	Slight 2 Moderate 9 Massive 8	7	6	14	12	2	1		16			3	2	10	2	2	1	18		4		8	7	14		16	3	5	12	
(2) Postnecrotic scarring	5	3		Moderate 3 Massive 2	1	3	4	4		2	1	2		2		1	3		1		3	2	1		2	2	5			5		4	1
(C) Chronic splenomegaly with extrahepatic obstruction	5			Slight 2 Moderate 3		5		1		5				5	1				4	5				1	3	4	5			3	2	
(D) Cirrhosis of liver without significant splenomegaly																																
(1) Diffuse hepatic fibrosis	2			Slight 2		1	2	2			1		1		2						2			1	1	2		2			2	
(2) Postnecrotic scarring	2	1		Slight 1 Moderate 1	1	1	1	2		1		1		2			1	1				2			2	2			2		2	
(E) Splenomegaly due to																																
(1) K.A.	1			Moderate						1					1					1			1				1			1		
(2) Cooley's anaemia ...	1			Moderate						1					1					1			1				1			1		

in some cases thrombocytopenia did not respond to standard therapeutic measures—a diagnosis of 'hypersplenism' was made. Based on these criteria, 'hypersplenism' was present in 29 cases.

Portal hypertension was not an important feature in the group of chronic uncomplicated splenomegaly (15 cases). Absence of haematemesis, ascites (except in one), absence of oesophageal varix (except in one case), absence of collaterals as seen at operation and as judged by venograms—lend support to the above view. This was confirmed in the majority of cases by actual manometric measurement of portal venous pressure at the time of operation. There was significant exception in 3 cases (where the portal venous pressure was above 250 mm. saline), in one which histological changes in the liver showed cirrhosis. The reason for performing splenectomy in this group was continued ill health together with progressive incapacity, evidence of 'hypersplenism' in many cases and the mechanical disability and disadvantage because of the presence of the very large spleen, all of which were below the umbilicus.

These cases have been followed up for periods varying between 6 months to 6 years (Table 3). The over-all results may be considered as satisfactory as judged by the improvement in general health and haematological study. There have been a few exceptions however in whom jaundice either due to virus hepatitis (infective hepatitis or serum hepatitis) retarded the progress and in one case brought about features of hepatic failure. One case died after operation.

In the second group of 19 cases, clinical evidences of cirrhosis of liver and some of the features of portal hypertension were present. The cases could therefore be clinically separated from the previous group even prior to operation. At operation, the clinical diagnosis of cirrhosis was confirmed by the macroscopic appearance and the feel of the liver in 18 of the 19 cases ; the portal venous pressure was consistently higher than in the previous group and collaterals were present in many of the cases. Even the solitary case with normal looking liver showed histological evidences of cirrhosis.

In the majority of cases, in the group, the reasons for splenectomy were the same as in the first group. The decision for undertaking splenectomy was further reinforced by the presence of manifestations of portal hypertension. The absence of advanced derangement of liver function in all the cases (Table 2) was a factor in deciding about the operative interference.

The results of splenectomy have been satisfactory in 11 cases and fair in 3 cases. There has been one operative death. One case died 2 months after operation due to hepatic failure. One case died of haematemesis 1 year after operation. 2 cases developed severe virus hepatitis after operation which considerably retarded their progress. All the cases in this group had long standing splenomegaly and evidences of liver damage and portal hypertension were of recent origin. In at least 10 of our cases, removal of the spleen caused regression of the manifestations of portal hypertension.

TABLE 3—SHOWING THE RESULTS OF FOLLOW-UP

	Up to 1 yr.	1 to 2 yrs.	2 to 3 yrs.	3 to 4 yrs.	4 to 5 yrs.	5 to 6 yrs.	Remarks
(A) Chronic splenomegaly	1	2	6	0	1	4	1 died (operative).
(B) Chronic splenomegaly with cirrhosis of liver :							
(*i*) Diffuse hepatic fibrosis ...	1	3	7	1	4	1	2 died (one 2 months after, another 1 year after).
(*ii*) Postnecrotic scarring ...	3	2	0	0	0	0	
(C) Chronic splenomegaly with extrahepatic obstruction	1	1	2	0	0	0	1 died after operation.
(D) Cirrhosis of liver without significant splenomegaly :							
(*i*) Diffuse hepatic fibrosis ...	0	0	0	0	1	0	1 died after 1½ years.
(*ii*) Subacute hepatic necrosis ...	2	0	0	0	0	0	
(E) Chronic splenomegaly due to :							
(*i*) Kala-azar	0	0	0	1	0	0	
(*ii*) Cooley's anaemia	0	0	0	1	0	0	

There were 5 cases of chronic splenomegaly where on detailed investigation the cases could be classed as being complicated by postnecrotic cirrhosis with nodular hyperplasia of the liver. The important features in this group were the same as in the group with diffuse hepatic fibrosis. The points for differentiation were the large lobulated or nodular liver found at operation. The diagnosis was confirmed in these cases by histological examination of the operative biopsy material. 3 of these cases developed jaundice at varying periods after the operation and recovered after a few weeks. All of them are at present doing well. Their present liver function studies show some improvements over their pre-operative level inspite of the episode of jaundice.

In 5 of our cases, the splenectomy was done for extrahepatic obstruction of the portal venous system (Das and Basu 1956). These cases had repeated and profuse haematemesis as their presenting symptom. None had ascites or liver dysfunction. Diagnosis was based on the venographic findings in 3 cases and was confirmed at operation in all. Only splenectomy was performed in 2 cases and splenorenal shunt in addition in 3 others. One case died after operation. All others are doing well and have had no further attacks of haematemesis. Histology of the spleen in this group showed appearances of fibrocongestive splenomegaly. Liver was normal. The follow-up period of these cases range from 6 months to 2 years.

Splenectomy was performed in 4 cases of cirrhosis of the liver, 2 of which were of the diffuse hepatic fibrosis type and 2 of the type of postnecrotic cirrhosis. Splenectomy was undertaken in these cases for portal hypertension and for the elimination of the factor of 'hypersplenism'. One patient after temporary improvement died of haematemesis 1 year 8 months after operation. One is free from symptoms 4 years after operation. In 2 others, sufficient time has not elapsed for evaluation.

In the case of kala-azar, the patient responded satisfactorily to treatment for leishmaniasis infection only after the main reservoir of the organism was removed by splenectomy. Subsequent to the removal of the spleen 4 years ago, there has been no recurrence of kala-azar and he has maintained progressive improvement in his general condition. The case of Cooley's anaemia had improvement of the blood picture only after splenectomy.

Our over-all results of splenectomy can be summarised as follows. There have been 2 operative deaths. 3 cases died sometime after operation from repeated haematemesis and 1 case from hepatocellular failure. Results have not been satisfactory in 7 cases—as judged by the persistence of ill health.

Improvement in haematological status has been significant in 34 cases. Liver function studies show improvement in 22 cases and evidences of portal hypertension have regressed in 18 cases (Table 4).

TABLE 4—POSTOPERATIVE IMPROVEMENTS IN HAEMATOLOGICAL STATUS, LIVER FUNCTION STUDIES AND PORTAL HYPERTENSION

	Haematology	Liver function studies	Portal hypertension
1. Marked improvement ...	20	10	14
2. 'Moderate' improvement ...	14	12	4
3. No improvement	7	5	8
4. Deterioration ...	4	10	5
5. Not assessed ...	5	13	19

Taking all the data into consideration, 37 cases have been benefited by the operation and are able to lead a relatively normal life.

SUMMARY

This paper summarises the investigational and operative data in 50 cases of chronic splenomegaly where splenectomy (with splenorenal shunt in a few selected cases) was performed as the operation of choice.

The cases were divided into 5 groups on the basis of these investigations as well from histological studies of the spleen and liver.

The indications for splenectomy in each group and the results of operation are discussed.

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Panthenol	1 mg.
Folic Acid	1 mg.
Vitamin B_{12}	2·5 mcg.
Vitamin C	20 mg.
Ferrous Sulphate (Exsiccated)	100 mg.
Cobalt Nitrate	5 mcg.

In Packs of 50, 100 & 500

LABORATORY DIAGNOSIS OF ENTERIC FEVERS

P. V. KURIAN, M.B.B.S., D.T.M., M.S.,

A. BALASUBRAMANIAN, M.B.B.S.

AND

D. S. CHANDRASEKHAR, B.SC., M.B.B.S.

From the Pasteur Institute of Southern India, Coonoor

Typhoid fever is endemic in many communities and forms one of the common diagnostic problems facing the general practitioner in the tropics.

Whether carriers are mainly responsible for the spread of enteric fever in our communities has not been investigated. Phage typing of typhoid bacilli isolated from cases, if undertaken in a systematic manner in a central reference laboratory, may give us valuable information regarding the epidemiology of enteric fevers. That typhoid and paratyphoid fevers are often very mild in children is well known. It is highly probable that the missed and undiagnosed cases are responsible to a great extent for the spread of these fevers.

Early diagnosis of enteric fevers has become specially important for the institution of specific antibiotic therapy. A wider use of laboratory aids for diagnosis is bound to reveal a larger number of mild and undetected cases. Provision of free diagnostic facilities is an important step in the control of infection. Then only will it be possible to perform carrier tests on all convalescent typhoid patients. Organisation of regional laboratories responsible for supplying culture media to hospitals, dispensaries and private practitioners will go a long way to improve the facilities for bacteriological diagnosis. The purpose of this note is to draw attention to some recent modification of the accepted method of blood culture and emphasise some points in the diagnosis by Widal reaction and clot culture.

Blood Culture

It is widely accepted that blood culture is the ideal method for the diagnosis of enteric fevers. One of the difficulties responsible for the infrequent use of blood culture as a diagnostic tool, is the non-availability of suitable culture media. This has been remedied to a great extent by the introduction of screw-capped bottles containing bile broth, suitable for mailing to a laboratory at a distance.

Castaneda (1947) introduced a method using a liquid and solid medium in the same bottle for the isolation of brucella from blood. This has been adapted for the diagnosis of enteric fever in many parts of the world (Hughes, 1955). The following is a modification of the Castaneda method. About 15 ml. of melted nutrient agar medium is introduced into a 4 oz. screw-capped, flat bottle and autoclaved at 15 lb. pressure (121°C) for 20 minutes, with loosened caps. On removing from the autoclave, the bottles are slanted so that the agar forms a slope on one flat surface. When it has cooled and set completely 25 ml. of sterile bile broth medium is introduced aseptically into the bottle. It is advantageous to have a rubber liner and a central hole for the screw cap. These bottles are incubated for 24—48 hours in order to make sure that they are sterile before use.

About 5 ml. of patient's blood, aseptically drawn, is introduced into the bottle and mixed well with the broth medium. The bottle is incubated in the vertical position and the agar slope is examined daily for evidence of bacterial growth. If no growth is observed, the broth containing the blood is allowed to bathe the slope for 2 minutes, and then incubated in the upright position. Any bacterial growth that is detected is subjected to confirmatory tests for salmonella.

The advantages of this method are several. With bile broth medium, commonly used in India for the isolation of enteric group of organisms, subcultures from the broth require time and material. The introduction of the agar slope into the bottle thus saves labour and material. In specimens, which are sent by post in the tropics, it is possible that growth of organisms may be found on the agar slope on receipt at the laboratory. This will help in a more rapid diagnosis. The chances of contamination of the cultures and the risk of laboratory accidents are also reduced.

Agglutination Reaction

The Widal reaction is still the most common test relied upon for the diagnosis of enteric infection. To take specimens for a Widal test no special equipment other than a sterile syringe and a sterile ampoule is required. If laboratory facilities are at hand, the results are available within 24 hours. The disadvantages of relying entirely on Widal test are well known. For about a week after the onset of fever, the serum may not show a significant titre. Soman and Modi (1953) in their large series found that one third of the bacteriologically proved cases of typhoid fever gave a negative Widal reaction. A few patients may not show any antibody response at all. The effect of prophylactic immunisation can be confusing Sometimes the titre may be equivocal. Occasion-

ally agglutination against both typhoid and paratyphoid organism is given by the same serum.

As a rule agglutination reaction is carried out in tubes using either Dreyer's method or Felix's method. The slide method advocated by some workers for bed-side diagnosis has not been generally accepted. The importance of using alcohol-treated (O antigen) as well as formalin-treated (H antigen) suspensions in parallel tests for the same specimen cannot be over emphasised. In a series of 514 specimens tested at the Pasteur Institute, Coonoor, 268 gave agglutination in a dilution of 1/125 or less against one or more of the four suspensions used in the test, H and O antigens of *S. typhi* and H and O antigens of *S. paratyphi A*. Of these typhoid-H alone was positive in 57 cases and typhoid-O alone in 48 cases. If only formalin-treated suspension of *S. typhi* were used, 48 cases out of 268 would have been missed.

A reaction in which the titre is less than 125 should not be considered positive. In the absence of isolation of the causative organism, a firmer evidence of infection should be sought by taking two serial specimens of serum and looking for a rise in agglutination titre.

Clot Culture

The isolation of the causative organism by culturing the blood clots from specimens received for Widal is a very valuable procedure, especially in the absence of routine blood cultures. The main difficulty in this method is the likelihood of contamination by other organisms. In a series of 514 specimens received for Widal test at this Institute, 116 strains of *S. typhi* and 11 strains of *S. paratyphi A* were isolated by clot cultures. Of these, 18 strains were isolated from Widal negative specimens. Comparing these 18 cases with the 268 Widal positive specimens, it is evident that 7 per cent more cases were brought to light by clot culture. Clot culture is evidently a procedure which should always be done by laboratories doing Widal test. Soman (*loc. cit*) recommends that, even when whole blood culture is done, clot culture should always be done as in some cases where the whole blood is sterile, clot culture yields the causative organism.

The obvious advantage of the clot culture over the whole blood culture is mainly due to the removal of the bulk of antibodies with the serum.

Summary

A modification of Castanada's method of blood culture, adapted for enteric fevers is described. The limitations of relying entirely on Widal reaction are discussed. The superiority of clot culture as a rapid and reliable method for the isolation of the pathogen is emphasised.

Acknowledgments

We are indebted to Kumari V. K. Visalakshi, Sri S. R. Krishnan, and Sri S. Belli for technical help and assistance.

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ACCIDENTAL POISONING BY PARATHION

S. ANANTASWAMY, B.SC., M.B.B.S., D.P.H., M.P.H.

Chemical Examiner to the Government of Mysore

H. S. LAKKE GOWDA, M.SC., ASSOC. I.V. R.I., A.R.I.C.

Assistant to the Chemical Examiner and Senior Chemist

AND

E. ANANTHA RAO, B.SC., M.B.B.S., D.P.H.

Deputy Director of Public Health

Public Health Institute, Bangalore

The introduction within recent years of anti-cholinesterase (Anti-Ch E) compounds as insecticides has led to problems arising from their toxicity to man. These compounds are manufactured in many countries chiefly as pesticides in agriculture and sold under many proprietary names, e.g., Folidol E 605 and Folidol M 40. Parathion, a p-nitrophenyl-diethyl-thiophosphate, is the active ingredient of these. The proprietary preparations containing it are used as sprays, dusting powders and aerosols.

The toxicological properties of parathion have been extensively studied and have been explained in terms of anti-cholinesterase action (Grob *et al*, 1949 ; Simpson, 1953 ; Sexton, 1953).

The following case report is that of a man who died after exposure to the insecticide. The exposure was accidental due to a foolish intention to demonstrate the nontoxicity or otherwise of Folidol to eye witnesses. The post-mortem findings and the results of chemical analysis are also recorded.

Case Report

History—On 21-8-56 at 8 P.M. one M., an employee in a garden at Bielhally (Bangalore District), placed 4 or 5 drops of Folidol E 605 from a bottle into the palm of his right hand and licked them. Immediately afterwards he complained of the extreme bitterness and pungency of the substance. He became restless and soon complained of pain (cramps) in the abdomen and back and later giddiness. He could walk some distance but his gait became unsteady. He became nauseated, and a white frothy liquid was coming out of his nostrils and mouth. He vomited once or twice and began to sweat profusely. Very soon he complained of dimness and blurring of vision. Though acutely distressed he could walk some distance, but was seized with cramps and a generalised muscular weakness. He fell to the ground on his stomach and struggled violently due to convulsive movements, which became more and more rapid and generalised. His breathing was hard and lapsed into coma. He became cyanosed and died within about 1½ hours after licking "Folidol", before any treatment could be adopted.

Post-mortem findings—Post-mortem examination performed not earlier than 12-14 hours after death, revealed cyanosis of the face, dilatation of pupils and clenching of hands and fingers. The tongue was bitten and a frothy fluid was oozing from the mouth and nostrils. The abdomen was bloated and rigor mortis was present. There was a vascular engorgement of all the internal organs, brain, heart, oesophagus, stomach, intestine, liver, spleen and kidney. The lungs were gorged with blood and oedematous fluid.

Chemical analysis—The following were sent for analysis :

(i) a bottle said to contain "Folidol"; (ii) stomach (wt. 150 g.) and its contents (vol. 75 c.c.); (iii) intestine (wt. 180 g.); (iv) liver (wt. 240 g.); (v) spleen (wt. 60 g.) and kidney (wt. 100 g.).

The analytical procedure followed for isolation and identification of parathion in the viscera was that of Gage (1952) as modified by Gunther and Blinn (1955). It consisted mainly of extraction with ether, reduction of the extracted matter (the p-nitrophenol radicle to p-amino-phenol and the S-ethyl isomer to the reduced S-ethyl isomer), separation of the reduced products by toluene and their identification by coupling with O-cresol. The development of the blue colour of indophenol was an indication of the presence of p-nitrophenol and the S-ethyl isomer.

A similar procedure was followed for identification of the composition of "Folidol" and in addition the presence of the phosphate and the sulphide radicles was also detected by independent common tests.

The method became a little tedious due to its elaborate procedures, nevertheless the substance identified in the viscera (stomach and its contents) was found to answer to the tests which were conclusive of its having been derived from the contents of the bottle of "Folidol".

Experiments on animals—Experiments conducted on laboratory animals demonstrated the toxicity of "Folidol". An emulsion of 1-2 per cent strength in water was prepared and 0·1 c.c., 0·2 c.c. and 0·5 c.c. were injected hypodermically into frogs, white mice and guinea-pigs respectively. Thus the dose of "Folidol" given was 0·002 c.c., 0·004 c.c. and 0·01 c.c. respectively. Folidol E 605 contains about 40 per cent parathion. Thus the actual dose of parathion administered was about 0·0008 c.c., 0·0016 c.c. and 0·004 c.c. to each frog, mouse and guinea-pig respectively. The signs and symptoms observed were as described below.

FROGS—Except for a lethargic state of the animal, no prominent signs or symptoms were observed until about 10 minutes from the time of injection. This was followed by flaccidity of limbs and a lack of prompt response to mechanical stimuli. There was some stiffness of muscles and joints and a few convulsive movements. The breathing which was rapid at first gradually weakened and finally stopped. The animal died in about 30 minutes after injection.

WHITE MICE—No marked signs and symptoms were observed for about 15 minutes, except for a prominent bulging of the eye ball, some restlessness and a disturbed condition of the hair. This was followed by twitchings of muscles and a staggering gait, rapid breathing and stiff movements of the tail. The pinnae of the ears were pale and cyanosed. The twitching of muscles gave place to convulsive movements and stiffness of limbs. The convulsions became rapid and respiration gradually failed. The animals rolled to one side, became unconscious and died. The twitchings of muscles continued for some time even after death.

GUINEA-PIGS—The signs and symptoms observed were similar to those observed in white mice, but the onset was preceded by shrieking of the animals as if they were in pain. There was involuntary urination and defaecation also.

Discussion

In western countries, following the occurrence of deaths due to exposure to parathion (Bidstrup, 1950) employees who were at risk were urged to adopt safety measures to reduce the degree of such exposure. When such is the case, the circumstances that prompted the deceased to demonstrate the toxicity of this substance are curious. In the presence of such gross ignorance on the part of the users in India it is futile to introduce the use of anticholinesterase pesticides in agriculture. The dangers of their use are emphasised by the case under report, particularly under conditions where safety measures and devices are not used.

Summary

A case of poisoning by parathion (an anticholinesterase insecticide) is reported.

Acknowledgments

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PUBLIC HEALTH

DISPOSAL OF HUMAN EXCRETA IN THE RURAL AREAS †

S. K. CHATTERJEE, M.B., D.P.H., D.T.M.,

Deputy Director of Health Services, West Bengal, Calcutta

THE PROBLEM—ITS IMPORTANCE AND URGENCY

The disposal of human excreta in the rural areas has been a sore problem for long engaging the attention of health workers. The problem has its special importance and urgency, firstly because by far the vast majority of the population in our country (about 80 per cent) live in the villages. In West Bengal, out of a total population of 2·5 crores, about 1·8 crores live in about 40 lakhs of houses distributed in about 35,000 villages located in an area of about 30,000 sq. miles, their main occupation being agriculture.

Secondly because a large number of our rural population are carried away each year by communicable bowel diseases which are preventible. The mortality statistics of the rural West Bengal from such causes, are given in Table 1 from which it would appear that though there has been a remarkable improvement as compared with our base line year, viz., 1948, yet the mortality rates in 1954 are still quite considerable.

TABLE 1—SHOWING THE MORTALITY RATE PER MILLE OF RURAL POPULATION

Disease	1948	1954
Cholera	0·6	0·08
Enteric group of fevers ...	0·14	0·08
Diarrhoea and dysentery ...	1·1	0·5

We feel we should also collect morbidity figures so as to be able to better evaluate the results of our efforts.

† Read at the Scientific Session of the Indian Public Health Association held at the All-India Institute of Hygiene and Public Health, Calcutta, September, 1956.

THE PROBLEM AND OUR APPROACH TO IT

So far as the solution is concerned the problem has presented itself as a multifaceted one. Apart from the well known facet of adverse socio-economic condition comprising of poverty, illiteracy, lack of health consciousness and sanitary sense, unclean habits, superstition etc., other important facets of the problem to our experience have been as under;

(a) Finding a suitable type of latrine independent of manual and mechanical aid and a safe method of disposal of human excreta.

(b) Construction of the same in sufficient number and that at a cheap price.

(c) Making these available to the villagers within their easy reach.

(d) To get the villager put on a latrine in his own house, to maintain it properly and to use it.

Finding a suitable type of latrine independent of manual and mechanical aid and a safe method of disposal of human excreta—For obvious reasons the water carriage system of collection and disposal is out of the question in rural areas. So also the conservancy system with the usual trenching or composting methods of disposal, particularly because sweeper-methars are neither available now in the villages nor they could be expected to be so ever in future. Reasonably thinking we may expect this class of sweeper-methars to altogether vanish from this country with the march of time and further progress in the social sphere. So we have to depend only on the selfcleansing type of latrines which would eliminate the need for sweeper-methars. Of these the usual domestic septic tank privies are most suitable but these are beyond the financial capacity of the average villager.

The bored-hole type does not last long, requires frequent shifting of the squatting water-seal plate which the villagers do not at all like, and has to depend on mechanical aid for boring, which the villagers cannot procure easily. In fact, this type was tried to be popularised amongst the villagers in this State but the move failed ultimately because of the drawbacks stated above.

The well type with the water-seal plate being capacious enough lasts longer and is independent of any mechanical aid; the digging portion may be done by the people themselves. This type has earned comparative popularity in the villages and is therefore being pushed in this State. In fact, a large number of such latrines with the sides of the wells protected by concrete or earthen rings has been constructed by the Public Health Engineering Branch of this State in the health centres, settlements of displaced persons, township etc.

These have been reported to be giving satisfactory service for the last few years.

For the rest of the country, the readymade water-seal plates made of concrete are being sold to the villagers at Rs. 10/- each in the areas covered by the NES-CDP Blocks whereas in the ten thanas of 8 districts under the National Water Supply and Sanitation Scheme, these are being distributed free. The villagers themselves are putting up latrines with the plates so supplied. From a sample survey made recently it appears that about 2 per cent of the houses in the NES-CDP Blocks and 17·5 per cent of the houses in the ten thanas under National Water Supply and Sanitation Scheme have been fitted up with this type of latrine. The relevant statistics are as follows:

Area of Survey	Approx. No. of houses in lakhs	No. of houses with latrines	Percentage of houses with latrines to total No. of houses
20 NES-CDP Blocks	4	7,869	2
10 Thanas under National Water Supply and Sanitation Scheme ...	2	34,500	17·3
10 Thanas other than above	2	Statistics not available	Believed to be negligible

Reports however have been received from a few places that the water-seal plates have sunk into the wells below. On enquiry it was found that these referred to the latrines constructed by the villagers themselves by mounting the plates directly over the wells dug by themselves. The sides of the wells were not protected by the earthen or concrete rings probably on account of the cost involved therein. The soil structure did not permit this type of mounting. Because such occurrences are likely to recur and multiply in future and produce a demoralising effect on even the enthusiastic section of the villagers, we need take note of this and find a remedy. A modification of the well type now being used at the Burdwan extension training centre promises an answer. In this modification the plate has not to be mounted directly over the well but can be connected to it by a pipe. The top of the well is covered with a roof made of bamboo pieces and earth and provided with a ventilation pipe. When the well becomes full, it may be closed up and another may be dug by its side and connected to the stationery plate by shifting the connecting pipe only. Apart from providing against the possible sinking of the plate into the well it saves the villager the trouble of physically shifting the used plate frequently which becomes a difficult problem to him in the absence of the methars in the villages. Another point of note in regard to the said modification is that it is being made in two types; one made of cement and sand, the other made of baked clay, the production cost being Rs. 3/8/- each for the former and Rs. 3/- each for the latter. The durability of the latter has been claimed to be as good as that of the former. If so, which time and experience alone can prove, it may serve as a valuable asset to us in fighting the short supply in cement if and when the said emergency arises. At Burdwan Extension Training Centre, it is said, both these types are rendering good account of themselves for the past one year. It has been considered worthwhile to bring this modification, particularly the clay model, to the notice of the P. H. Engineers and other experts in the field of Environmental Sanitation for purposes of examination and opinion (Figs. 1, 2 and 3).

The texture of the soil in West Bengal varies, being either sandy, laterite or rocky at places. The well latrine has been rendering satisfactory service at most places except those where the soil is rocky. For the latter type of soil we are yet to find a suitable type of self cleansing latrine. In areas where the subsoil water level is high or becomes so during the monsoon, the problem has been met by raising the plinth sufficiently high above the ground level.

Construction of the same in sufficient number and that at cheap price—We seem to have succeeded in crossing this hurdle in view of the fact that we have been able to put up already a good number of latrines and are about to construct another lot of 1,34,000 water-seal plates very soon. It has been possible to offer these plates at a sale price of Rs. 10/- each including carrying cost. We have provided Rs. 31 lakhs for the purpose in our Second Five Year Plan.

Making the plates available to villagers within their easy reach—We have been able to make considerable progress in this respect in so far as construction of these at most places at the thana level has been possible. But it is felt that we should proceed further by arranging constructions at union level or still better at village level. So far as my information goes, the cost and the trouble involved in transit from the thana to the villager's home is exerting some deterrent influence on their popularity. The average cost of

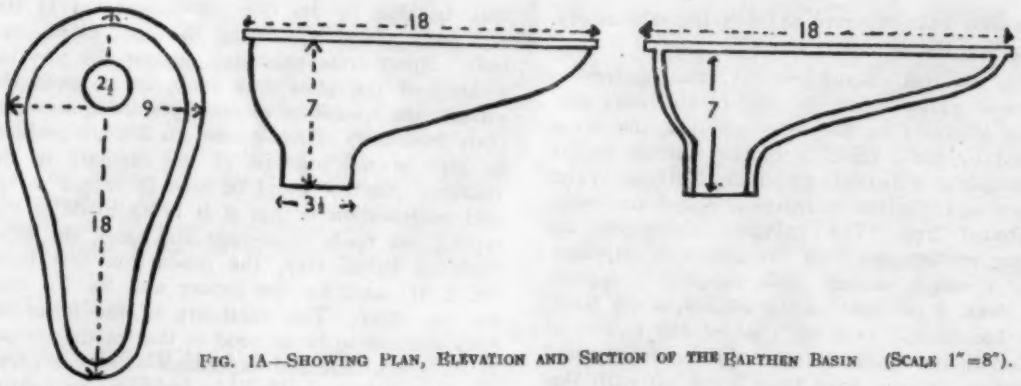

FIG. 1A—SHOWING PLAN, ELEVATION AND SECTION OF THE EARTHEN BASIN (SCALE 1"=8").

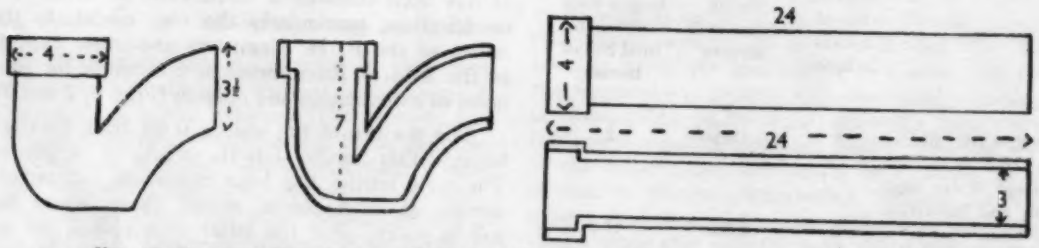

FIG. 1B—SHOWING ELEVATION AND SECTION OF SYPHON AND PIPE (SCALE 1"=8").

FIG. 2—BASIN, SYPHON AND PIPE OF THE LATRINE.

FIG. 3—THE LATRINE AS MOUNTED.

transport is Rs. 1/8/- per plate which is included in the cost of Rs. 10/- per plate stated above.

Getting the villager put up a latrine, maintain it properly and use it—This is the most difficult of the different facets of the problem. The causes and the remedy lie in the socio-economic plane.

It would appear from the statistics given elsewhere that only 2 per cent of the houses have been fitted up with latrines in the NES-CDP Blocks where the plates are being sold to the villagers at Rs. 10/- each whereas 17·3 per cent of the houses have been fitted up in the areas covered by the National Water Supply and Sanitation Scheme where the plates are being supplied to the villagers free of cost. The difference, in the numbers of latrines put up, represents the influence of the economic factor on the problem. This suggests that we should devise ways and means either to cut down substantially the production cost which stands at present at Rs. 7/8/- per plate of concrete or to find a cheaper variety, e.g., the clay model of the Burdwan extension training centre mentioned elsewhere, provided, of course, the latter is found otherwise suitable.

On the social side, the traditional habit of the villager for defaecation on the banks of water courses or in the beds of rivers or on the open fields presents the greatest single hurdle to negotiate. The answer essentially lies in the mass campaign of health education in an organised manner.

We have concentrated our energies on this front only lately when we were assured of sufficient supplies of water-seal plates by our Engineering Branch. Some of the methods that are being tried or are going to be tried in this State are stated below.

(a) Apart from wide publicity and propaganda by the State Publicity Department, the entire field organisation of the Health Department of this State (beginning from the Civil Surgeons down to the village level workers) has been instructed to intensify efforts in the field of Health Education particularly during the monsoon when the villager might be psychologically more inclined than in other seasons of the year to consider putting up a latrine in or near his home. The reason being that during the season defaecation in the open fields or on banks of water courses to which he is habituated becomes a trying proposition partly because of the seasonal changes in the environments and partly because of his fear from snake bites.

(b) Besides insisting on inculcating sanitary habits amongst young school children by the School Health Division of this State, plans for school premises are not being passed either for new constructions or for additions and alterations until adequate provisions have been made in them for sanitation. As regards the already existing schools without proper sanitary arrangements, the educational authorities have been approached so as to get these provided with proper sanitary conveniences, utilising the Government grants and aids as levers.

(c) The usual problem of a rural health worker has been that when he visits the village, he misses the male section of the village population, because the latter by the time he reaches, have left for their jobs. It becomes difficult for a male health worker to carry out his task in the absence of the male members of the villagers' families. The solution of this problem seems to lie in employing a fair proportion of female village level workers.

(d) It is felt however that it would have hastened achieving our objective if the campaign of Health Education were supported (1) by offering special inducements to the villages, e.g., giving priorities in allotting tubewells (for which there is yet insistent demand from almost all the villages) to such of the villages or localities as could show the greatest number of latrines put up and (2) by persuading the local village leaders and the union board presidents to take up the local leadership in convincing the population within their areas about the importance of using latrines and getting them put up in their own homes. The local civil executives, viz., the S.D.O.'s and the Circle Officers might assist a lot in this regard by exerting their influence over the presidents of the unions. Besides, they may also encourage competitions and award token prizes with due ceremonies to such of the presidents as might succeed in getting the highest number of latrines put up in their respective areas.

(e) Though legislation would be of little avail at this stage when the vast majority of the rural population are not latrine minded, yet as a measure, it has to be kept in mind. We would need providing the following legal powers to the Gram Panchayets who are expected to come into being in the rear future.

(1) To require the villagers to put up latrines of approved type in their houses where there are none.

(2) Construction of new houses and additions or alterations of old ones should be subject to the approval of the local authorities.

(3) Not to sanction any plan for new constructions or for additions and alterations of old ones unless due provisions have been made for a latrine of the approved type.

(4) To make it a punishable offence to defaecate at any place other than in a latrine.

The Studies and Research

A. The studies, conducted on the behaviour of the well latrines that have been put up in the different parts of this State in the past few years, have led the Chief Public Health Engineer of this State to draw certain interesting conclusions of considerable practical importance. These are:

(1) Water-seal type of well latrine is a cheap and the best form of sanitary latrine for the State of West Bengal.
(2) These latrines work much more satisfactorily without the kitchen waste.
(3) Water-seal constructed of cement mortar does not give sufficiently smooth surface. Faecal matter adheres to the surface and unless householders take special care, the same is likely to give an unsightly appearance and may even be a source of contamination.
(4) The glazed stone-ware seal is more expensive and beyond the means of the rural population.
(5) These latrines work satisfactorily even where the subsoil water level is very high, provided the plinth of the latrine is raised to a higher level.
(6) The soakage wells function better with hand-flushed latrines than where there is piped water supply for flushing.

B. Further researches are also needed and that urgently: These are—

(1) In the field of engineering—(a) To find a suitable type of selfcleansing latrine for the rural areas of the hilly districts, e.g., Darjeeling. (b) To find a still cheaper pattern with smoother surface, and requiring less water for flushing.
(2) In the field of health education—To find a more effective mode of approach to the minds of villagers so as to create an urge in them for putting up latrines in their own houses and using them.
(3) In the field of statistics—To evolve a suitable method to evaluate better the results of our efforts.

Conclusion

The position in regard to the problem of disposal of human excreta in the rural areas has been discussed above with particular reference to the State of West Bengal. The overall position in this State cannot be called discouraging in consideration of the fact that we had to begin from a scratch and that against heavy odds. Reasonable time has to be allowed before any spectacular result could be expected in the field of environmental sanitation particularly under the existing social and economic circumstances. Various measures discussed above have been introduced or are going to be introduced to fight this multifaceted problem. It is yet premature to attempt drawing conclusions on the effect of most of these measures on the problem. The experiences of other States in this field as well as the advice from the expert observers and research workers would be of considerable interest and value at this stage.

CASE NOTES

MONOCYTIC LEUKAEMIA

S. N. SENGUPTA, M.B., M.R.C.P. (ED.),

AND

J. C. GHOSH, M.B., D.T.M.,

Department of Medicine,
Chittaranjan Hospital,
Calcutta National Medical College

Although leukaemia was nosologically established as early as 1845, monocytic leukaemia as a distinctive variety was not recognised until 1913 (Reshad and Schilling-Torgau).

Though not frequent, the condition is not a rarity and it is almost definite that a large proportion of cases goes undiagnosed in the absence of proper investigation. Indeed, incidence as high as 8·8 per cent of all leukaemias has been calculated by Gauld and his colleagues in a recent survey (Gauld *et al*, 1953). According to Chatterjea (personal communication) the approximate figure may be about 15 per cent of all leukaemias investigated and followed in the Department of Haematology of the Calcutta School of Tropical Medicine. This figure, however, represents a highly selected group.

To our knowledge, only four proved cases of monocytic leukaemia have so far been reported in literature from India (Napier *et al*, 1943). Two cases (of Schilling type), one subacute and the other acute, who were admitted in this hospital within a very short period, are reported below not only for the general interest in the comparatively rare condition but also to draw attention to the diverse presenting features and the necessity of prompt services of competent haematologists in investigating such cases

Case Reports

Case 1—A young housewife aged 22, was admitted in the hospital on 11-10-55. She was perfectly well till about 6 months prior to admission

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when she started having occasional headache, palpitation and breathlessness on accustomed exertion. About the same time she developed an asymmetry of the face with some difficulty in eating, food accumulating in the left cheek. She also noticed that she was getting unusually pale for some time. The occasional headache gradually became persistent and severe. For the last two months she was also having recurrent pain in the left ear with occasional whitish discharge. The patient was running a low grade irregular temperature for about a week before admission. She was a nullipara and had missed two successive periods before admission.

She was of average build and was fairly nourished. There was severe pallor of the skin and conjunctiva. The asymmetry of the face was found to be due to an infranuclear type of facial palsy of the left side. The partial deafness on the left side appeared to be due to chronic otitis media with perforation of the membrane. No other neurological abnormality was detected and there was no other significant clinical finding elsewhere.

Laboratory investigations: Blood picture is given in Table 2. E.S.R.—120 mm./1st hour (Westergren); W.R.—negative; blood protein—7·38 g. per cent with albumen—2·25 g. per cent and globulin—4·94 g. per cent.

Stool and urine showed no other abnormality except a trace of albumen in the latter.

In view of the severe anaemia for which no obvious cause was found, she was put on iron and folic acid and was given a transfusion of 150 c.c. of blood. Aspirin was given for headache as often as necessary. Penicillin was administered 200,000 units 8-hourly for the otitis media. There was no improvement whatsoever with this treatment.

Progress—About 3 weeks after admission (31-10-55) the patient was complaining of severe pain in the right ear and was found to be somewhat confused. No obvious cause for the earache could be detected at that moment. Two days later the right ear began discharging offensively. She had a convulsion and her right eye ball appeared to be a little protruded without any chemosis or ophthalmoplegia. Ophthalmoscopy at this stage revealed severe papilloedema with exudates and streaky haemorrhage in both eyes. The tendon jerks were brisk but the plantar response was equivocal. The proptosis of the right eye gradually increased and slight proptosis also developed in the left eye. X-ray of the skull did not reveal any abnormality.

Inspite of the gross fundal changes a lumbar puncture was done on 2-11-55. The C.S.F. pressure was 570 mm. of water which did not rise further with pressure on the jugular veins. The fluid was uniformly haemorrhagic and it contained plenty of R.B.C. and only one lymphocyte per c.mm. Biochemical picture of C.S.F. is given in Table 1.

On 10-11-55, bilateral subhyaloid haemorrhage was seen for the first time. The jerks were still very brisk and plantar response was now unequivocally extensor on both sides. The state of confusion varied from day to day and convulsion recurred on several occasions. On 20-11-55 the plantar response on the left side was still extensor but on the right it was flexor and this persisted thereafter. Lumbar puncture was repeated on several occasions and the results are shown in Table 1. All this time the temperature

TABLE 1—SHOWING C.S.F. FINDINGS OF CASE 1

	Dates			
	2-11-55	8-11-55	22-11-55	3-12-55
Pressure (mm. water) ...	570	350	410	430
Cells/c.mm. (lympho) ...	1	1	Nil	2
Protein (mg.%) ...	820	535	480	550
Glucose (mg.%) ...	71·4	68	63	70
Chloride (mg.%) ...	640	666	635	700

continued unchanged and the state of anaemia showed no improvement inspite of 2 more blood transfusions of 150 c.c. each and the anti-anaemic treatment with iron and folic acid, which was continued throughout. During this period, considering the refractory nature of the anaemia a sternal marrow examination was done and this showed a typical picture of monocytic leukaemia. Normal haemopoietic tissue was almost completely absent. The patient's condition deteriorated steadily and ultimately she succumbed to her illness on 6-12-55 before any antileukaemic agent could be tried. Autopsy was not permitted.

The series of haematological investigations are given in Table 2.

CASE 2—A man aged 54, was admitted on 17-11-55 for irregular continued temperature and 20-30 loose motions daily for two weeks. The faeces was mixed with blood and mucus and the motions were associated with gripes and tenesmus. The patient was worried about rapid loss of weight and a rapidly developing pallor. On enquiry it was learnt that he had a stitching pain on the right side of the chest about 6 weeks previously,

TABLE 2—HAEMOGRAM OF THE TWO CASES UNDER REPORT

	Case 1					Case 2		
	12-10-55	28-10-55	11-11-55	23-11-55	2-12-55	18-11-55	24-11-55	5-12-55
Hb. (g.%)	4·4	4·6	4·2	4·0	4·2	6·8	6·4	6·2
R.B.C. (million per c.mm.) ...	10·94	0·98	0·90	0·88	0·91	1·35	1·34	1·30
M.C.V. (cμ)	122	...	...	118	...	80	...	...
M.C.H.C. (%)	32	...	...	33	...	32	...	...
W.B.C. (thousand per c.mm.) ...	2·44	2·6	2·2	2·8	2·4	13·5	7·64	9·5
Neutrophils (%)	37	35	36	39	35	4	4	5
Monocytes (%)	63	65	63	61	64	62	60	62
Lymphocytes (%)	0	0	1	0	1	27	22	18
Blast cells (%)	0	0	0	0	0	7	14	15

which was associated with slight rise of temperature. He had also a few loose motions during that period. He was then treated as a case of 'acute dry pleurisy' with relief of symptoms.

The patient was of average build and height but the nutrition was poor and he appeared very pale and severely anaemic. There was slight oedema of the lower extremities and puffiness of the face. The breathing was somewhat laboured.

There was enlargement of the lymph glands in the neck, axilla and groin. They were discrete, firm and tender. The liver and spleen were both palpable about 1″ below the costal margins. They were firm and slightly tender. The caecum and the sigmoid colon could be easily palpated and were very much tender. There were few crepitations at the bases of both lungs. The cardiac apex was in the fifth intercostal space just outside the mid-clavicular line. A grade II systolic murmur was audible over the base of the heart. No abnormality was detected in the central nervous system or elsewhere. The temperature was varying between 100° and 103°F and was irregular throughout the illness. B.P. was 110-120 mm. Hg systolic and 60-70 mm. Hg diastolic. The pulse rate varied between 110-126 per minute and was regular.

Laboratory investigations—Blood picture is given in Table 2.

Stool contained a fair number of ascaris ova and some pus cells. Urine showed no abnormality.

Many bleeding indurated ulcers were found in the lower part of the rectum on digital and proctoscopic examination and swabs from those ulcers revealed plenty of trophic forms of *Entamoeba histolytica*. There was no bleeding piles or granuloma.

The sternal marrow showed a picture of monocytic leukaemia.

A large number of monocytes were found in the aspirated material from a neck gland.

A needle biopsy of the liver showed few scattered areas of necrosis. But there was no cellular infiltration.

The patient was treated with two small blood transfusions and iron and folic acid by mouth. Emetine hydrochlor. gr. ½ daily was given intramuscularly for one week. Crystalline penicillin was used in a dose of 3C0,000 units every 8 hours. 6-mercaptopurine 100 mg. daily was started after the diagnosis was confirmed and continued till the patient expired.

Inspite of treatment there was no improvement of the anaemia and dysentery. The temperature continued unchanged and the general condition deteriorated steadily. The patient got a sore-throat with very offensive breath within a very short period. A couple of days before the fatal termination on 9-12-55, he developed severe asthenia and apprehension of impending death, a feature which we have found to be quite common before the termination of acute leukaemias. Permission for autopsy was not obtained.

DISCUSSION

The recognition of monocytic leukaemia is not always easy. There is no typical clinical feature and there may be a wide range of variation in the day to day blood picture in a given case. To create confusion 29·8 per cent monocytic leukaemia presents an aleukaemic or subleukaemic blood pictures (Gauld *et al*, 1953). The leucocyte count is generally less than in other types of leukaemia, but the range of variation is wider. The average leucocyte count, according to Whitby and Britton (1953) is 15,000 to 45,000 per c.mm. of blood. In Case 1, the total W.B.C. in the peripheral blood was persistently near 2,500 per c.mm. and in Case 2, it varied between 7,640 to 13,500 per c.mm. The differen-

tial count in Case 1, although not normal, did not attract particular attention in the initial stage. The predominant cells were reported as 'mononuclear cells' which were wrongly regarded as lymphocytes (relative lymphocytosis). In Case 2, the abnormal cells were, however, recognised from the beginning.

The extraordinary feature of Case 1 was the confusing neurological manifestations. In fact they led us off the track and we did not seriously consider the possibility of the grave haematalogical catastrophe until quite late.

The patient came with a left infranuclear facial palsy and soon developed severe headache, offensive discharge from the ear, partial deafness and a papilloedema without localising neurological signs. She was disoriented at times and had several epileptiform convulsions. This clinical picture together with the high C.S.F. tension justified the diagnosis of intracranial sinus thrombosis of otitic origin. Even subarachnoid haemorrhage, found in our case, can occur in sinus thrombosis (Purdon-Martin, 1955). We, however, found it difficult to correlate it with the facial palsy and proptosis. There was no chemosis or ophthalmoplegia to suggest cavernous sinus thrombosis as the cause of the latter.

Going through available literature we find that Case 2 of Napier *et al* (1943) presented with features in many ways similar to our case. Their patient had throbbing in the head, dimness of vision with retinal haemorrhage, defect in hearing and also a facial palsy. In Case 4 of their series, they described swelling of the left forehead and maxilla and proptosis. Obviously these were due to local deposition of leukaemic cells, though not proved. Recently, Bonnin (1951) reported a case of monocytic leukaemia with chloroma. Littoral and Mahamaud (1955) described a case of monocytic leukaemia in a young man who presented with primary neurological features. He had headache, epileptiform attacks, dilirious states, impairment of vision and ocular and facial palsies. This was found to be due to local proliferation of leukaemic cells in the nervous system.

In the absence of autopsy it is not possible to know the exact nature of the intracranial lesion. But it seems probable that the development of several intracranial chloromata was responsible for the facial palsy and proptosis. Such space-occupying lesions must cause a rise in the intracranial pressure, and may by themselves be responsible for the subarachnoid haemorrhage. Nevertheless, the possibility of a sinus thrombosis cannot also be definitely ruled out. Pressure on a sinus by a chloroma or infiltration by leukaemic cells may precipitate thrombosis, specially when severe anaemia and infection are concurrently present.

The blood picture of this patient was subleukaemic and the failure to recognise the exact nature of the disorder early was mainly due to our inadvertent negligence to seek further information regarding the nature of the reported 'mononuclear cells' and to do a bone-marrow examination, which eventually gave the diagnosis.

We treated both the cases by blood transfusions. In both the cases the result was disappointing. Folic acid antagonists are considered to be of no value in monocytic leukaemia and 6-Mercaptopurine is claimed to be the drug of choice. It was tried in Case 2 but the result could not be assessed as the patient died within two days of commencement of the treatment.

Summary

Two cases of monocytic leukaemia, one acute and the other subacute, are reported with a brief review of relevant literature.

The subacute case had predominantly neurological manifestation and subleukaemic blood picture. The former is suggestive of chloroma-like tumour in the cranial cavity with or without thrombosis of the sinuses.

The acute case had clinical and haematological picture of leukaemia with indurated ulcer in the rectum.

Acknowledgment

We are grateful to Dr. M. N. Sarkar, Superintendent, Chittaranjan Hospital and to Dr. J. C. Saha for kindly allowing us to publish the cases and to Dr. J. B. Chatterjea of the School of Tropical Medicine, Calcutta, who very kindly examined the sternal marrow and peripheral blood and helped us in arriving at a proper diagnosis. We also like to thank Dr. S. Das, Clinical Pathologist, and Dr. N. Saha, Senior House Physician, for the constant help in the investigation and management of the cases.

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ACUTE MONOCYTIC LEUKAEMIA

L. K. GANGULI, B.SC., M.D., M.R.C.P.

Hony. Jr. Visiting Physician,
N. R. Sircar Medical College and Hospitals
Calcutta

The incidence of acute monocytic leukaemia varies from 8·1 per cent (Bethel, 1943) and 20-25 per cent (Price, 1956). Case reports of acute monocytic leukaemia are not many in Indian literature. The case reported here had characteristic onset and clinical picture of acute leukaemia with a few distinctive features of monocytic type.

Case Report

U. M., a 25 year old Hindu male, was admitted on 29-9-54 with irregular fever, severe

weakness, palpitation and anaemia of 20 days' duration. The patient said he was enjoying perfect health and doing his normal work 25 days prior to his admission when he suddenly developed pain and swelling of the gums accompanied by bleeding. He had also slight rise of temperature at that time. Because of the nature of the complaints he consulted a dentist and was prescribed broad spectrum antibiotics. He took 1 g. each day for 8 days. The swelling and fever subsided but he gradually developed intense weakness which made it difficult for him even to sit up on bed. After about ten days he again started having irregular fever, the maximum rise being 101°F.

Past history and family history were non-contributory.

On examination the patient was found to be of average build and nutrition. He was slightly dyspnoeic but there was no cyanosis. He was extremely asthenic with marked pallor of the face. Anaemia was severe. The pulse rate was 104 per minute and respiration 24 per minute. The blood pressure was S/D—110/60 mm. Hg. There was slight tenderness over the sternum. The liver and the spleen were not palpable. A localised soft systolic murmur was present both in the mitral and in the pulmonary areas. There were no haemorrhagic spots on the skin. Lymph glands were not palpable. Other systems were normal.

Laboratory investigations—The details of peripheral blood examination are given in Table 1.

TABLE 1—SHOWING RESULTS OF PERIPHERAL BLOOD EXAMINATION ON DIFFERENT DATES

	21-9-54*	30-9-54	7-10-54	12-10-54**
Haemoglobin (in g. %) ..	4	4·4	3·2	—
R.B.C./c.mm. ..	1·4	1·1	1·0	—
W.B.C./c.mm. ..	8,500	9,800	10,500	1,09,000
Polymorphs % ..	68	16	15	16
Lymphocytes %	32	82	84	Nil
Monocytes % ..	Nil	2	1	84
Eosinophils % ..	Nil	Nil	Nil	Nil
Blast cells ..	Nil	Plenty	Plenty	Monoblasts

* Done outside prior to admission.

** Report from haematology department of the School of Tropical Medicine.

Treatment—In view of severe anaemia and history of intake of antibiotics the treatment was started with a provisional diagnosis of aplastic anaemia. Immediate transfusion of 150 c.c. of group O blood, continuous administration of oxygen and penicillin by intramuscular injections were started. Haematinics by mouth and parenterally were also commenced. Though the diagnosis was changed to acute leukaemia the treatment was continued on the same lines. Another blood transfusion of 160 c.c. was repeated on 6-10-54. There was no improvement. Rapid deterioration went on and the patient died of combined respiratory and circulatory failure 17 days after admission.

DISCUSSION

The sudden onset, rapid development of anaemia, extreme prostration, irregular fever and fatal termination within a period of 42 days, are all characteristic clinical features of acute leukaemia. The onset of the disease was with gingivitis which is a distinctive oral lesion of monocytic leukaemia (Osgood 1937; Cecil and Loeb, 1955).

The blood picture prior to admission did not attract attention to leukaemia. Acute leukaemia of lymphocytic type was thought of due to 82 per cent lymphocytes and presence of blast cells in the peripheral blood. But definite typing of the blast cells could only be established after the expert opinion was obtained which was made available after examination of both peripheral blood and sternal puncture material. The terminal increase in the total count of W. B. C., a characteristic feature of acute leukaemia, was also present in this case.

SUMMARY

A case of established monocytic leukaemia with fatal termination is described.

ACKNOWLEDGMENTS

I am grateful to the Superintendent, N. R. Sircar Hospital, for permission to use materials from the hospital records. Thanks are due to Dr. J. B. Chaterjea, at present Officer-in-Charge, Department of Haematology of the School of Tropical Medicine for kindly identifying the type of blast cell.

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CALCUTTA, MAY 1, 1957

SURGICAL TREATMENT OF CHRONIC SPLENOMEGALY AND ASSOCIATED STATES OF PORTAL HYPERTENSION

Surgical treatment of chronic splenomegaly and associated states of portal hypertension has gradually established itself and in many cases remains the only available method of treatment. With improvement in surgical techniques, advances in the anaesthetic procedures and availability of blood for replacement as necessary, the scope of surgical endeavour in the management of this syndrome has progressively advanced. At the same time, our understanding of the pathogenesis of chronic splenomegaly as well as of many of the states of portal hypertension has been greatly helped by recent advances in biochemical and radiological methods of investigation.

Chronic progressive splenomegaly is a relatively frequent pathological condition met with in our country particularly in Bengal. Although there has been some work in the elucidation of the exact pathogenesis of this condition in the past[1-7], its exact nature is still not properly understood. The term "Bengal" splenomegaly was first coined in 1932[1] and although the exact pathological basis for such a nomenclature is open to question, there may be some justification in the term indicating the increased prevalence of the syndrome in this part of the country.

Recently this clinical syndrome, the histology of the liver spleen and the effects of treatment have been described[8].

[1] De, M. N.—*Indian J. M. Research*, **19** : 1029. 1932.
[2] *Idem*—Rep. Scientific Adv. Board of I.R.F.A., New Delhi, 1937, p. 92.
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It is acknowledged on all hands that the progressively increasing and massive splenomegaly exerts a deleterious influence on the health of the patient in general and on the haemopoietic system in particular. It is also known that the hepatic parenchyma suffers increasing damage resulting in late cases in full fledged cirrhosis and irreversible hepatic fibrosis.

Medical treatment with haematinics, nutritious, high protein diet and general care can be effective up to a point and for a limited period. The specific role of the massively enlarged spleen in continuous cell destruction and sequestration (so-called "hypersplenism") can only be effectively combated by splenectomy. Uptil this time, there has been no report of this method of treatment in a reasonably large number of cases and followed up for a sufficiently long time. In 1954[9], a review of 11 cases, which were properly investigated and followed up, was published.

An extended report of 50 of their operated cases followed up for 1 to 6 years appears elsewhere[10] in this issue. Based on pre-operative clinical, radiological and laboratory investigational criteria as well as on operative findings and post-operative histological study of the spleen and liver the authors have classified their cases under 5 categories. 39 of their 50 cases belonged to the group of chronic splenomegaly—15 without hepatic damage or portal hypertension and 24 with significant hepatic fibrosis.

An interesting group in the series were the cases of infrahepatic obstruction of the splenic and portal venous system resulting in splenomegaly and repeated episodes of bleeding. Splenoportal venography has been of great help in this group in elucidating the site as well as the possible nature of obstruction and gives a clue to the nature of the operation to be performed—either splenectomy or splenorenal shunt[11]. As is to be expected,

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[10] Basu, A. K., Das, A. and Aikat, B. K.—*J. Indian M. A.*, **28** : 380, 1957.
[11] Basu, A. K. and Das, A.—*Brit. M. J.*, **2** : 916, 1956.

the histology of the liver in this group was normal.

Indications of splenectomy for primary cirrhosis of liver, other protozoal infections such as kala-azar or for blood dyscrasias such as Cooley's anaemia are controversial and each case has to be judged on its merits. Splenectomy may be of benefit by eliminating the possible factor of hypersplenism and also to some extent by reducing the portal hypertension if present.

A great advance in the technical aspect of the surgery of the spleen is the employment of the thoraco-abdominal approach in the difficult cases. The advantages of this method of exposure in bringing the vascular subdiaphragmatic and posterior peritoneal adhesions under direct vision have to be seen at the operation table to be properly appreciated. The hazards of blind tearing of adhesions and ineffective control of bleeding by packs need deter the surgeon no longer and in the mobilisation of large adherent spleens, he can proceed with deliberation and with proper surgical control of bleeding at all times.

The over-all results of the group reported, are apparently satisfactory. The absence of pre- and post-operative data on haematological and liver function studies however make them somewhat speculative. A few untoward effects during the follow-up period need further study. One is the development of jaundice in many cases few weeks or months after splenectomy. Whether this is due to a transmitted virus infection due to transfusion or whether the removal of the splenic reticulo-endothelial barrier enables the circulating virus to get a foothold in the liver has to be determined. Another important point for further investigation is the improvement or otherwise of the hepatic function after splenectomy in those cases who had significant hepatic damage prior to operation. This is a crucial point and although the paper mentions 3 cases as having died from progressive hepatocellular failure and 22 cases as having shown improvement in liver function studies—objective evidence by repeated liver biopsy studies and a battery of carefully performed liver function tests carried out over a period of years will be necessary before a definite opinion can be formed in the matter.

I.M.A. BUILDING FUND

The Indian Medical Association has completed 27 years of its existence. From small beginnings the Association now numbers on its rolls nearly twenty thousand members, a matter of gratification no doubt. During all the years of its existence, the activities of the Association have multiplied and now run into diverse channels, each of importance to the profession. The central organisation which has to bear the brunt of the body's activities and keep liaison with its numerous branches from the State to the local levels, however has no habitat of its own. It still has to function in cramped rented rooms and with loss of efficiency. The amenities that the central headquarters lack are now enjoyed by many a branch. While several branches have buildings of their own, the central organisation still lacks it.

Some time ago we published an appeal for the building fund of the central headquarters at New Delhi over the signature of the President and General Secretary of the Association and the Editor of this Journal. Our readers are aware that the building is likely to cost Rs. 8 lakhs. We already have the land measuring about half an acre. In the appeal every member of the Association was requested to donate Rs. 50/- in one or more instalments. Some have already made donations in certain cases over Rs. 1,000/- each. Our fresh appeal is to those who have not contributed to the fund. We shall request them to donate at least Rs. 10/- immediately. The rest they can pay in subsequent instalments. We hope our appeal will not be in vain. We should remind members that the building has to be completed by 1958 and the sum so far collected is roughly about Rs. 52,000/-, a small fraction of our total needs. We appeal every member to rise to the occasion and contribute his best.

CURRENT MEDICAL LITERATURE

Fractional Serum Bilirubin in Clinical Medicine

WATSON (*Ann. Int. Med.*, **45** : 351, 1956) gives in the following lines the summary of his observations on the importance of fractional serum bilirubin determination in clinical medicine :

The original observations of van den Bergh on the essential difference between the prompt direct and the delayed or indirect reacting fractions of the serum bilirubin are fully supported by recent observations, especially those of Cole and Lathe on the polar or water soluble, and nonpolar, or water insoluble, character of the two types. The hitherto undescribed bilirubin sulphate is a polar compound exhibiting a prompt direct diazo reaction. The ease with which nonpolar, crystalline bilirubin can be isolated from sources such as bile, in which the initial behavior is almost entirely polar is more in accord with a complex than an intrinsic molecular difference.

Additional emphasis is justified as to the validity of measurement of the direct reacting bilirubin at one minute. Measurement at 30′ includes well demonstrated when the values at 1′, 30′ and the total (after alcohol), obtained with serum from cases of uncomplicated haemolytic jaundice, are compared with the amounts of polar and nonpolar bilirubin from the same samples, separated by reverse phase chromatography. The correspondence between 1′ and polar bilirubin is excellent. The 30′ direct bilirubin, however, clearly includes nonpolar bilirubin.

The accumulated experience with the determination of 1′ and total bilirubin, and bilirubin ratio, in the past 10 years in relation to the clinical problems of jaundice, liver and biliary tract disease, and anaemia, has fully confirmed the usefulness of this fractionation and the manner in which it often enhances the value of the serum bilirubin determination. The latter may be summarised as follows :

A. The 1′ bilirubin is often increased significantly within a normal value for total bilirubin. This has been observed especially in cases of early hepatitis, cirrhosis, common duct stone and hepatic carcinomatosis. The finding is of value in revealing an abnormality and while not differential in itself, often points to the presence of disease of the liver or biliary tract.

B. Low bilirubin ratios in cases with elevated total serum bilirubin are indicative of retention jaundice in varying degree. The lowest ratios (20 per cent) are characteristic of haemolytic disease or constitutional hepatic dysfunction of the Gilbert type. The Dubin-Johnson type of jaundice and hepatic dysfunction generally exhibits ratios above 40 per cent, most often in the range characteristic of ordinary regurgitation jaundice.

C. While the majority of patients with jaundice due to parenchymal liver disease have bilirubin ratios in the same general range as found in cases of biliary obstruction (45 to 80 per cent), there is a significant segment of cases with diffuse liver disease in which ratios below 40 per cent are enncountered. In the range of 35 to 40 per cent there is small likelihood of confusion with (benign) biliary obstruction, and below 35 per cent almost none.

Fibrinogen Concentration in Clinical Conditions

LOSNER AND VOLK (*Am. J. M. Sc.*, **232** : 276, 1956) write :

The fibrinogen level as determined by the rapid "clot density" method was studied serially in patients with acute myocardial infarction, coronary insufficiency, rheumatic fever in various stages of activity, acute and subacute bacterial endocarditis, diabetic and arteriosclerotic gangrene as well as in cases with hepatic disease.

In acute myocardial infarction the maximum fibrinogen level indicates the extent of the myocardial damage and the severity of a clinical condition.

Coronary insufficiency can be readily differentiated from myocardial infarction by the fibrinogen level which remains normal throughout.

In rhematic fever the acuity of the disease correlated well with the fibrinogen level.

The fibrinogen level remains normal in bacteraemia due to acute or sub-acute bacterial endocarditis while the CRP is markedly positive.

Demarcation of a gangrenous lesion is presaged by an early decline of the fibrinogen to normal.

Parenchymatous jaundice is associated with subnormal fibrinogen values whereas obstructive jaundice usually reveals high normal or distinctly elevated fibrinogen levels.

The serial determination of fibrinogen has proven to be a useful tool in the diagnosis, prognosis, and management of the above conditions. (*Author's summary*).

The Liver in Kala-azar

SEN GUPTA AND OTHERS (*Ann. Trop. Med. & Parasitol.*, **50** : 252, 1956) give in the following lines the summary of their observations on the study of 15 cases of kala-azar in which liver biopsy and tests of hepatic function were performed and histological and histochemical examinations of the liver tissues were made :

Histological changes in the liver varied very considerably according to the degree of parasitization and the presence of complications. The changes noted were : proliferation of the reticulo-endothelial cells, including the Kupffer cells, and their distension with leishmania, resulting in varying degrees of alteration in the pattern of the hepatic lobules; collection of lymphocytes, plasma cells and histiocytes (parasitized and unparasitized) resembling microscopical granulomata in the parenchyma of the liver and in the region of the portal tracts; and mild degenerative changes in the hepatic parenchymal cells, with signs of regeneration. Fatty degeneration of the parenchymal cells, generally regarded as a common feature in postmortem material, was found in only three cases; it was believed to be due to nutritional deficiency, particularly to very poor protein intake.

Cirrhotic changes were found in only four cases, all of which had complications. It is concluded that, though some prominence of hepatic reticulum may occur, in uncomplicated kala-azar cirrhosis is uncommon.

Histochemical study showed depletion of liver glycogen in most of the cases with intense or moderate infection. Except for a weak reaction for alkaline phosphatase in the walls of the sinusoids and in the neighbouring cells in areas with many parasitized Kupffer cells, reaction for the enzyme was more or less normal.

The significance of these findings is discussed.

Some Aspects of Hair Changes in Kwashiorkor

RAO AND GOPALAN (*Indian J. M. Research*, **45** : 85, 1957) give in the following lines the summary of their observations on some aspects of the hair changes in kwashiorkor :

Six amino acids were estimated in the hairs of a series of normal Indian children, of Africa cases of kwashiorkor in different stages of treatment, and of Indian children with kwashiorkor and simple undernutrition.

There is a significant reduction in the cystine content of the hair in cases of protein malnutrition, irrespective of the fact whether the hair is discoloured or not and that this abnormality is reversed after a few weeks of treatment with high protein diet.

There is no correlation between dyschromatrichia and the content of amino acids investigated.

It would appear from the present investigation that cystine content of the hair may be a better indication of the severity of protein malnutrition than the hair discolouration.

Nephropathy of Potassium Deficiency

RELMAN AND SCHWARTZ (*New Eng. J. Med.*, **255** : 195, 1956, Ref. *J.A.M.A.*, **162** : 688, 1956) describe the occurrence of a previously unrecognized disorder of renal function associated with potassium deficiency in two men and three women with severe chronic potassium depletion that had resulted from chronic diarrhoea. Severe hypokalaemia was the rule, but no patient was dehydrated or sodium depleted, and none had significant acid-base disturbances. There was no evidence of renal wasting of potassium. One patient had pronounced polyuria. Blood nonprotein nitrogen levels were normal or only slightly elevated, but all patients had vasopressin-resistant hyposthenuria. Clearances of inulin, endogenous creatinine, and para-aminohippuric acid were significantly reduced. Routine urinalysis revealed minimal inconstant albuminuria and cylindruria in three patients. Replacement of potassium deficits by daily intravenous administration of potassium chloride resulted in gradual restoration of the significantly impaired renal function to normal in four patients. In the fifth patient renal function was only partially restored, but this was probably related to the complicating factor of chronic pyelonephritis, as well as to the fact that complete restoration of potassium balance could not be achieved in the course of the observation period.

Renal biopsies obtained in three of the five patients revealed hydropic and degenerative changes confined chiefly to the convoluted tubules, without significant glomerular or vascular lesions. In one patient, striking vacuolation of the tubules was observed. A second renal biopsy was carried out in two patients one year later ; it revealed that restoration of the potassium balance had produced total healing of the lesion in one patient and marked improvement in the other. Observations in the five patients and in eight patients whose cases were collected from the literature suggested that the nephropathy of potassium depletion is a relatively common clinical and pathological entity that may occur as a complication in a wide variety of circumstances. Potassium depletion apparently should be added to the list of causes of reversible renal disease.

Urinary Manifestations of Colon, Rectal and Anal Disease

KAMMANDEL (*J. Omaha Mid. West Clin. Soc.*, **16** : 68, 1955, Ref. *Am. J. Gastro-enterol.*, **26** : 370, 1956) writes :

Close anatomic relationship and mutual neurogenic innervation allows disease of one organ to affect another. Colon disease affects the urinary tract more often than the reverse. The kidney may be involved by direct extension of neoplasms or diverticulitis, but is rare.

Involvement of the ureters from the rectosigmoid is common in males, and also in females following hysterectomy. Diverticulitis causes hydroureter and hydronephrosis. Tumours by direct extension also cause obstruction of urine, but less commonly. This back pressure may not cause obvious symptoms, so that a complete urologic examination is indicated prior to colon surgery, to evaluate procedure and prognosis.

Bladder infection demands cystoscopy, and if a granulating area is noted posteriorly, proctoscopy and barium enema x-ray are indicated to rule out diverticulitis with colovesical fistula. Urinary morbidity after proctosigmoidectomy is 100 per cent. Indwelling catheter is required for 7—10 days in all cases, with resultant secondary infection. Exaggeration of a prior stricture or prostatic obstruction is often overlooked but the cause for retention in most patients is unknown. Persistence of obstruction in 60 per cent of males and 40 per cent of females is a most importannt urologic problem secondary to this operation.

Differentiation of prostatic from rectal carcinoma by digital examination should be easy. The fascia of Denonvillier acts as a barrier to prostatic tumours, but the opposite is not true. Perirectal extension from the prostate may cause some errors, but the mucosa in these cases is always normal.

Haemorrhoids, constipation and hernia in the elderly male may be caused by straining due to obstructive uropathy. Ischiorectal infection can cause urethral symptoms of frequency, decreased stream or retention. Extension below Colle's fascia accounts for inflammatory or neoplastic spread to the shaft of the penis and lower abdominal wall.

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CURRENT TOPIC

MEDICAL COUNCIL OF INDIA

At the 47th Session of the Medical Council of India on 30th March, 1957, Dr. C. S. Patel in his Presidential Address dwelt on the following :

Visitations and Inspections

I reported to you at the last session, the Visitors reports on the medical colleges at Jamnagar, Bhopal, Trivandrum, Patiala and Ludhiana were forwarded to the universities concerned for their observations. At the last meeting, the observations of the Gujarat University in respect of the M. P. Shah Medical College, Jamnagar, were placed before you, and as directed, the University has been requested to implement the recommendations made by the visitors, and intimate to us the action taken in this behalf. The observations of the Agra University along with the visitation report on the Medical College, Bhopal, are being placed before your Executive Committee. As regards Medical College, Trivandrum, subsequent to the visitation, an inspection was carried out in order to consider the question of recognition of the M.B.B.S. degree of the Travancore University. The observations of the University both on the visitation and inspection reports having been received, the matter is being placed before you for consideration. The observations of the Punjab University on the visitation reports on the Patiala Medical College and Christian Medical College, Ludhiana, are also being placed before your Executive Committee. Our visitors have further inspected the facilities for teaching obtaining at the K. G. Medical College, Lucknow in respect of the Kanpur Medical College students admitted there. The visitation report has been forwarded to the Lucknow University for their observations, on receipt of which the matter will be placed before you. As decided at the last meeting the Medical College at Jabalpur, affiliated to the Sagar University, has been inspected on behalf of this Council, and the reports will be placed before you along with the observations of the University, when received. It came to our notice that a medical college has been started at Ranchi and it was further revealed that 50 students have been admitted for this institution, at other colleges. Thirty students have been drafted to Darbhanga Medical College and twenty to Patna Medical College for training pending the proper arrangements at Ranchi. The college would be affiliated to the Bihar University. Under my direction both the Patna and Bihar Universities have been addressed to intimate the additional facilities provided for the training of Ranchi students at their colleges, and that a visitation on behalf of the Council would be necessary to ascertain the factual position. We are anxious that the training of regular students should not be adversely affected in any way. The Bihar University has suggested an inspection by the Council which is being arranged, at both these centres. We have not yet received any reply from the Calcutta University as to the dates of inspection on behalf of the Council of the Bankura Sammalani Medical College, which has been allowed affiliation by that University. As soon as we receive information from them, a visitation of this institution would be fixed up. There is a Medical College at Hyderabad, viz., Gandhi Medical College whose affiliation is under the consideration of the Osmania University. We have already written to the University for particulars and we would arrange a visitation of the institution at a convenient date. As suggested by Madras University, a visitation of the Madurai Medical College, affiliated to the University, would be arranged during July/August next. A newly established medical college at Bangalore is seeking affiliation to the Mysore University, with whom we are having correspondence to arrange an inspection of the institution at a very early date.

Such visitations on behalf of the Council, I consider to be essential, so that the institutions may not run the risk of disapproval later. It is difficult to remedy the defects when they get mature. I maintain that while the autonomous character of a university in respect of affiliation should not be infringed, the functions of the Medical Council of India, as enjoined by its Act, in respect of the maintenance of a particular standard of medical education in the country should not also be vitiated. It is, therefore, necessary that the universities should co-operate with the Council in this task and ensure that proper standards in respect of buildings, equipment, staff, etc., are provided with adequate clinical prospects before any institution is affiliated. The universities should take the earliest opportunity to inform the Medical Council of India of the details in this behalf and seek for an inspection of such institutions in order to avoid future complications.

Between 1954 and 1956, we have carried out periodical undergraduate inspections due at the universities of Calcutta, Lucknow, Bombay, Delhi, Patna, Nagpur, Agra, Andhra and Madras. The recommendations of the Inspectors embodied in their reports are still receiving the consideration of the authorities of the universities of Calcutta, Bombay, Lucknow, Delhi, Patna and Nagpur. On receipt of their observations, the matter would be placed before you. The Inspection reports along with the observations of the universities of Agra, Andhra and Madras were placed before you at the last meeting and the existing recognition was continued with the addition of approval of M. G. M. Medical College, Indore under Agra University. Meanwhile, as directed, the universities have been requested to rectify the deficiencies pointed out by the Inspectors in their reports. The periodical inspections due at the universities of Utkal, Gauhati and Poona have been arranged during this year.

Under the direction of your Executive Committee, inspections have been carried out at various centres for recognition of postgraduate medical qualifications, referred to us by the Government of India. Between 1953 and 1956, we have carried out 96 inspections in different branches of post-graduate medical qualifications, including 7 re-inspections. On your recommendations, 8 such qualifications have been included in the Schedule and 9 are under the consideration of the Government of India. The three public health qualifications, recommended by you, have not been agreed to by Govern-

ment for inclusion in the Schedule, as according to their ruling, unless the Act is amended, such qualications cannot be included. One qualification was not recommended by the Council. 24 cases were put up to you at the last meeting and in the remaining cases, observations of the university concerned or further information in this connection, are being awaited. About sixteen further inspections are being arranged during March/April, 1957.

Recognition of Indian Medical Qualifications by General Medical Council of United Kingdom

At the last session, the Council had approved the M. G. M. Medical College, Indore, which is affiliated to the Agra University. The recommendation in this behalf has also been made to the General Medical Council for similar recognition. Inspite of intensive efforts on our part, the General Medical Council of United Kingdom has not agreed to accord retrospective recognition to the qualifications of the universities of Bihar, Poona, Utkal, Gujarat, Nagpur, Andhra, Patna and Calcutta (in respect of two gaps), and Rajputana, as also M.M.P .of West Bengal. Under the direction of your Executive Committee, the Government of India have been apprised of the position.

As regards L.M.S. (State Medical Faculty of Punjab), your Executive Committee did not consider it necessary to pursue the matter with the General Medical Council since it is a defunct qualification. The cases of M.C.P.S. (Bombay), M.B.B.S. (Osmania), and M.B.B.S. (Mysore) are under the consideration of your Executive Committee and necessary information from the authorities concerned is being obtained.

Recognition of Hospitals

Your Executive Committee have under consideration the question of recognising hospitals in India for purposes of post-examination training as prescribed in our revised recommendations on Professional Education and also for inclusion in the list of Commonwealth hospitals for internship required for registration in United Kingdom. Under the direction of your Executive Committee, information is being collected regarding hospitals attached to the teaching and non-teaching institutions available for the purpose as also the possibility of utilising military hospitals in this connection. In order to collect complete data and to avoid delay and prolonged correspondence, the Executive Committee had decided that a member of the Council and the Secretary should go round to personally apprise the universities and State Governments of the position with regard to the information required in connection with the medical institutions. The action on this decision could not be taken for want of adequate funds and the Secretary being tied up with work at headquarters. In view of the recent reorganisation of the States, the information available so far has to be reshuffled and the tour, as envisaged in the decision of the Executive Committee, may have to be undertaken as soon as the funds become available. Meanwhile, the matter is being put up to the Executive Committee for further consideration.

Reciprocity with Other Countries

I had reported to you at the last Session, our position in this matter has been very clear in as much as we welcome negotiations for mutual recognition of medical qualifications between India and other countries, provided the fundamental principle of direct reciprocity is not vitiated. At present, proposals received from Pakistan, South Australia, Victoria, South Africa and New Zealand, are receiving the attention of your Executive Committee in the light of our basic stand in the matter.

Concession to Licentiates

The Government of India seems to be anxious that the condensed course should be continued, and in my last address, I had informed you of the position taken by your Executive Committee in this regard. As directed by the Committee, the matter was explained to the Government of India adding that in case sufficient provision is made for such training with the help of the Government of India and the State Governments, the Council would be prepared to continue granting facilities for admission of the Licentiates to the M.B.B.S. course. The Government of India, however, consider that it is for the universities and the State Governments to provide facilities for this course according to the required standard. What we are anxious about is that the training of regular students should not be affected in any way and the Government of India should take the responsibility for ensuring proper and adequate facilities for the continuance of the condensed course at various colleges. It has been observed that the universities and the State Governments, obviously for financial reasons, seem to be helpless in providing necessary additional facilities in the medical colleges resulting in overcrowding and consequent lowering of standards. However, the matter is again being considered by your Executive Committee, who are also receiving a deputation of the Indian Medical Association in this connection.

Military Training

In November, 1952, the Council adopted a resolution that in order to inculcate a proper sense of discipline and to improve students both physically and morally during their period of training in the medical colleges, there should be a course of military training consisting of P.T., drills, use of fire arms, etc., etc. Exceptions could be made in the case of those who are certified as medically unfit to undergo the training. The Government of India was approached in the matter and requested to take necessary action so as to make it possible for the medical colleges under recognised universities to implement the recommendation. The Government of India have addressed the State Governments in the matter and they consider that the training in the National Cadet Corps seems to be the best means of achieving the object which the Council has in view. It has been added that medical students might be encouraged to join the National Cadet Corps Units and the State Governments might provide necessary finances to enable as many students as possible to enrol themselves in the National Cadet Corps.

Syllabus of Study of Preventive and Social Medicine

According to your direction the draft syllabus of study of preventive and social medicine, which was recommended to you by the Executive Committee, was forwarded to the universities for eliciting their opinion in the matter. While the replies so far received show a general agreement, further suggestions have also been offered, which need consideration. On receipt of the replies from the remaining universities the matter will be placed before your Executive Committee for recommendation for your final decision.

Special Course in Pre-Medical Education

I had reported to you at the last session, the report of the sub-committee regarding Pre-Medical Education, in view of the creation of a 3 year degree course and abolition of I.Sc. in certain universities, which was forwarded to all the universities for their views. Replies from 7 universities are still awaited, on receipt of which the matter will be placed before you.

Teaching of Midwifery

In our recommendations on Professional Education we have laid down general principles and the requirements with regard to teaching in midwifery, in respect of instructions as also attendance to labour cases by students in the maternity hospitals and in the patient's homes. Your Executive Committee had decided that detailed information with regard to the conditions prevailing at the various medical colleges regarding teaching in midwifery, should be obtained. Therefore, a questionnaire has been issued to all the medical colleges on the subject, including questions about the increase in the number of confinement cases during the last 5 years and also regarding increase in time allotted to clinical midwifery. The information when received will be tabulated and put up for your consideration.

Recognition of Medical Qualifications Granted in Pondicherry

I am glad to report that a medical college is being set up at Pondicherry where the medium of education would be both in French and English. The institution would be run by the Government of India, and it would ultimately be affiliated to the Madras University. At the proper time, I hope, inspection on behalf of the Council will be asked for to ensure the existence and prospects of adequate pre-clinical and clinical teaching facilities at the institution In the meantime, a request has been received through the Government of India for the recognition of the qualification of "Medicin diploma' de I 'Ecole de Medicine de Pondicherry", which used to be granted in that territory. In the past, we had been trying to establish reciprocity between India and French possessions, but it did not materialise as the French Government did not allow Indian doctors to exercise their profession in any capacity in the French territory. Now, things have changed and the question of recognition of the French diploma, mentioned above, as held by Indian citizens needs sympathetic consideration. The matter is being considered by your Executive Committee in the light of the available information.

Recognition of Qualifications Awarded by Speciality Boards in U.S.A. and Canada

The question of recognising diplomas and certificates granted by Speciality Boards in U.S.A. and Canada was considered by your Executive Committee in October, 1953, and they were not in favour of granting recognition to these diplomas and certificates for appointments as teachers and specialists in India. Subsequently, more information was received through the Government of India in relation to establishing reciprocity with U.S.A. It was revealed that the Indian medical qualifications were not recognised by the different medical associations in the States, but American universities recognised Indian qualifications for purposes of higher study and research. It was also observed that American universities did not follow any uniform practice as each institution reserved to itself the right of accepting or rejecting candidates for advance work on the basis of their own evaluation of these qualifications. The position was noted by your Executive Committee in March, 1955. Thus, no reciprocity of recognition of medical qualifications between India and America could be formulated. As regards Canada, since the authorities there did not agree to have direct reciprocity with us and insisted on recognising Indian qualifications, provided they were recognised by the General Medical Council of United Kingdom, the Canadian qualifications could not be recognised for purposes of the Indian Medical Council Act, after a certain date. In September, 1956, the Director of Health Services, Assam, had enquired from us whether we recognised the certificates granted by the Boards of Speciality in the U.S.A. and Canada as alternative qualifications to M.D. & M.S. degrees granted by the Indian universities. In this connection, he forwarded to us Government of India's circular wherein the Government had enjoined on the States and Public Service Commissions that such certificates and diplomas should be considered as alternative qualifications to M.D. and M.S. degrees granted by the Indian universities. The agreement of the Union Public Service Commission in this matter was also cited. The Council, however, did not receive the circular nor was it consulted in the matter. On individual merits, however, we have been allowing certain American and Canadian qualifications for registration as well as appointment in medical colleges under our special resolutions. In no case, any certificate or diploma of the Speciality Boards has been recognised as such. The matter of equating the certificates and diplomas of Speciality Boards in U.S. and Canada as alternative qualifications to M.D. and M.S. degrees granted by Indian universities was considered by your Executive Committee in October, 1956, and their recommendation in this behalf is being placed before you as also further information received from the Director-General of Health Services in this connection.

All-India Institute of Medical Sciences Act, 1956

At the last session I placed before you my reactions to the All-India Institute of Medical Sciences Act, 1956. Under the direction of your Executive Committee the Government of India was requested for clarification of certain points relating to this Act *vis-a-vis* Medical Coun-

cil of India. In reply, the Government has informed us that one of the objects of the Institute is to develop patterns of teaching and for this purpose it will lay down independently its own undergraduate and post-graduate courses of study without necessarily consulting the Council in the matter. It has been added that other Institutions may take advantage of the improved pattern of medical education which may be set up by the Institute. It follows that the standard laid down by the Medical Council of India will not be adopted by the Institute, while the standard which may be laid down by the Institute may be taken advantage of by the various universities, thus creating a sort of double standards by two different bodies for the same class of education, and I do not know who would declare as to which is better or which should be implemented. At any rate it is evident that the Medical Council of India will have nothing to do with the standards which may be laid down by the Institute. Further it has been stated that the degrees and diplomas which may be awarded by the Institute will neither be recognised on the recommendation of the Council nor any Government order for their inclusion in this Schedule of the Act. They will obviously be *ipso facto* recognised by the Council, although the Council will have no control for inspection of facilities for teaching or of standard of examinations obtaining for these degrees and diplomas granted by the Institute. In short, while the degrees and diplomas granted by the Institute, will be taken as recognised by the Council the latter will have no control whatsoever on the assessment of their sufficiency or otherwise. Although the Act has come into a law, yet I am not happy about the position which has been created and I fear that it will lead to confusion worse confounded. However, the matter has been placed before your Executive Committee for their consideration.

Amenities to Teaching Personnel

In some of my previous Addresses, I had referred to this important aspect of medical education, i.e., provision for proper amenities and adequate pay to the teaching personnel in this country. I must pay my tribute to the teaching staff in the various medical colleges, who inspite of various handicaps have been doing excellent work, and I quite appreciate the growing discontent and dissatisfaction amongst them due to overbearing conditions. It is high time that concerted efforts should be made to bring about effective improvements in the present day conditions of the teaching services in our country. To that end, we had represented the matter to the authorities of the various institutions and from the replies, so far received, I am glad that they agree in principle to ameliorate service conditions of the teaching staff, but due to financial stringency, they cannot embark on any tangible scheme in this direction. While the financial implications are quite appreciated we cannot afford to allow deterioration in the standard of teaching. Medical education is a matter of national importance and we cannot ignore the reasonable demands of teachers in this regard. A teacher can only devote himself to teaching and research work when he is reasonably free from economic worries. Many teachers have of necessity to take to private practice to add to their income and many run from one place to another, whenever a higher pay is offered. To attract more medical men to the teaching profession and to prevent them from leaving their posts it is essential that the pay of teachers in medical colleges should be adequate and of a uniform standard. This would keep them above reasonable wants and prevent them from neglecting the trust imposed in them, in search of better emoluments in practice or other services, bringing in train inefficiency in teaching and training, which naturally occur in the absence of tried and experienced teachers. It is also necessary that the age of superannuation in the case of a whole-time teacher be raised from 55 to 60 to make up for the dearth of teachers in some of the institutions, as also to take advantage of the rich and mature experience, which such teachers have acquired. They should also be provided with amenities, like gratuities, pension, provident fund, etc., on a scale comparable to their counterparts with high qualifications in their profession or service. As I have said, we are receiving the views of the various authorities in this matter, which, in due course, would be placed before you. In the meantime, I would earnestly urge upon the Central and State Governments to take urgent and effective steps to improve the conditions of the teachers in medical institutions on the lines, I have indicated above.

All teachers do not have research talents as all research scholars are not necessarily good teachers. Yet teaching and research go hand in hand and are complimentary to each other. Research does play an important part in teaching and if the teacher is inclined towards research he can stimulate interest in his students and train them as well. Due to lack of encouragement and requisite facilities many a talented teacher with the best of intentions is unable to take to research work. It would go a long way if adequate funds are earmarked for this purpose and teachers are remunerated and encouraged for research and training students in it. As I have suggested elsewhere a special cadre of research workers need also be created to afford proper opportunities to the younger generation in this direction.

Medical Education Grants Commission

You are aware that the number of medical colleges in the country has considerably increased and many more colleges are in the offing. Although I welcome the increase in the number of medical colleges, yet I assert that it is the quality which counts, and in order to achieve it, it is essential that our medical institutions are established and run on sound and efficient basis. There should be proper and adequate provision according to the accepted standards with regard to staff, equipment, building, etc. For this purpose, sufficient money is, no doubt, required, and the number of medical colleges in this country form by themselves an important unit for special attention in the matter of allocation of funds for teaching and research purposes. Therefore, I welcome and suport the opinion of the Conference of Indian Medical Association held during December, 1956, for the creation of a Medical Education Grants Commission on the lines of the University Grants Commission. I hope

that such a Commission would be able to meet the present difficulties in the matter of finances, in the absence of which medical education cannot progress and improve and our students will continue to go to other countries for post-graduate and research training.

STATES RE-ORGANISATION ACT, 1956

The States Re-organisation Act, 1956, as passed by the Parliament, has come into force. In pursuance of this Act the universities and medical institutions in Part 'B' States, have come directly under this Council, and their qualifications would appear on the First Schedule. Further, these States would also be represented on the Council. We have not yet received adaptation of Laws Orders from the Government of India in this regard. So, I cannot give you the full effect and implications of this Act in respect of our Act.

INDIAN MEDICAL COUNCIL ACT, 1956

At the last meeting, a Sub-Committee was appointed for the purpose of going through all the suggestions, received from the different members, bodies and individuals regarding the Indian Medical Council Bill, 1956. The Sub-Committee submitted its report, a copy of which has already been forwarded to you. The Indian Medical Council Act, 1956 as passed by Parliament has received the assent of the President on the 30th December, 1956. A copy of this Act has also been supplied to you by the Secretary for your information.

NOTES AND NEWS

Council of the World Medical Association

The Norwegian Medical Association will be host to the 29th Session of the Council of the World Medical Association in Oslo, Norway, April 29 to May 5, 1957.

The Council is the executive body of The World Medical Association and includes the elected officers, Council members and officials of the organization. Twenty-three members from fifteen countries are expected to attend, one each coming from as far away as Australia, India and Chile.

The Council at this session prepares its reports and recommendations for the 11th General Assembly to be held in Istanbul, Turkey, September 29 to October 5, 1957. Some of the topics under consideration are :

1. Ways and means of implementing world wide recognition and protective powers to the emblem for civilian doctors and their units in time of war.
2. International Medical Law.
3. The trend in some countries toward establishing various "degrees" of medical qualification.
4. Medical Secrecy under Medical Social Security plans.
5. The program of the Second World Conference on Medical Education (Chicago, 1959).
6. Conclusions and recommendations resulting from the First Latin American Hospital Conference (Havana 1956).
7. The role of the Regional Secretary and Secretariat.
8. Priority in Expenditure of Association Funds.
9. Central Repository for Medical Credentials—progress report.
10. Desirability of compiling and publishing report on the conflict and outcome of medical organizations and various government agencies in certain countries.
11. Liaison Officers' reports on activities of other organizations of interest to The World Medical Association.
12. Conditions of medical practice in Cuba and in Norway.

Summer School in Health Education, London

This is a working conference for doctors, nurses, health inspectors, teachers, and auxiliary health and social welfare workers from various fields and different countries. It will devote attention to new content of Health Education, community attitudes and motivation, effective methods of group and community education, and the evaluation of results. In addition the programme will offer an intensive practical course in the production and use of teaching materials with demonstrations of how these can be adapted to local conditions. The school will be held on 20th-30th August, 1957. The subject for discussion is the Promotion of Health and the Techniques of Health Education. Members of the IMA who wish to participate in the Summer School should apply direct to the Medical Director, The Central Council of Health Education, Tavistock House, Tavistock Square, London, W.C., under advice to the Central Office IMA, Delhi.

Cancer and Smoking

Four American organisations, the National Cancer Institute, National Heart Institute, American Cancer Society and the American Heart Association, set up some time ago a seven-man study group to study the relation between lung cancer and smoking. The group's report has been published. While containing nothing new, the report makes a careful re-appraisal of all the facts so far published as also some unpublished data.

According to the experts "the smoking of tobacco, particularly in the form of cigarettes, is an important health hazard." As to the cause and effect relationship between smoking and lung cancer, the evidence, it said, "is adequate for considering the initiation of public health measures." The group however suggested no such measure. Other points in the findings are :

Cigarette smoking is indeed a major cause of lung cancer, the risk rising with the quantity smoked. On the average it is 5 to 15 times greater in moderate smokers (10 cigarettes a day or more) than in non-smokers. The figures are 27 times greater in heavy smokers (40 cigarettes or more a day).

Smoking is not the sole cause of lung cancer. Air pollution is a great hazard. In Liverpool (U.K.) deaths for lung cancer has been apportioned as follows, smoking 50 per cent ; air pollution 35 per cent. No conclusive cause-effect relation has been established between smoking and heart disease.

The experts urge more research on the cancer causing agent in smoke with a simultaneous effect to remove it.

3,000 Nurses to Go to Italy

3,000 nurses from almost 60 countries are expected to attend the Eleventh Quadrennial Congress of the International Council of Nurses due to be held in the E.U.R. Congress Hall, Rome, Italy, from May 27th to June 1st, 1957.

The Theme of the Congress is to be "RESPONSIBILITY", under which various aspects of nursing education and nursing service will be considered; and nurses from many parts of the world including India will contribute papers and participate in discussions on the various subjects under the over-all theme.

Enquiries concerning the Congress may be addressed either to the General Secretary, Trained Nurses Association of India, 28 Alipur Road, Delhi 8, or to the Headquarters of the International Council of Nurses at 1, Dean Trench Street, Westminster, London, S.W. 1, England.

£500 Benger Prizes for "Original Observations in General Practice"

Prizes totalling £500 are being offered to general practitioners for written reports on original observations in general practice. The prizes, established by Benger Laboratories Limited, will be known as the "Benger Prizes for Original Observations in General Practice", and will consist of three annual prizes of £250, £150 and £100 respectively.

The prizes are limited to general practitioners actively engaged in medical practice anywhere in the world. Closing date for entries will be July 31st 1957. Entries are to be addressed to the Chairman of the Awards Committee, The College of General Practitioners, 54, Sloane Street, London, S.W. 1.

Post-Graduate Training in Pediatrics

The next course for training students for the D.C.H. of the Calcutta University will start in June, 1957. Only medical graduates can be admitted.

The prospectus and form of application can be obtained on payment of Rs. 2/- to the Director, Institute of Child Health, 95, Dilkhusa Street, Calcutta 17.

Medical Council of India

A meeting of the Medical Council of India was held on the 30th March, 1957, at the Council Office under the presidentship of Dr. C. S. Patel. Thirty members were present. Dr. S. N. Mathur was re-elected as Vice-President of the Council. Dr. B. Narayana and Dr. B. N. Banerji were elected as members of the Executive Committee. The Council re-elected Drs. B. N. Ghosh, P. K. Ghosh and M. L. Gujral as representatives of the Council on Drugs Technical Advisory Board. Dr. K. N. Sinha was re-elected on the Indian Standards Institution. Dr. M. D. Patel was elected on the Pharmacy Council of India.

The Council approved for recognition the following qualifications :—

M.B.B.S.—*Travancore University;*

D.O., D.G.O., M.D. (Path. & Bact.), M.D. (Medicine) and M.D. (Obst. & Gyn.)—*Andhra University;*

M.D. (Medicine with special subject), M.D. (Path.), M.D. (Physiology), M.S. (Ophth.), M.S. (Surgery with special subject), M.S. (Anatomy) and D.O.M.S.—*Punjab University;*

D.O.—*Aligarh University;*

D.P.B., D.G.O., D.G.M., F.C.P.S. (Mid. & Gyn.) and F.C.P.S. (Ophth.)—*College of Physicians and Surgeons of Bombay.*

The Council agreed to recognise the medical qualifications granted in Victoria on reciprocal basis.

The Council recommended to the Government of India and State authorities to ensure that the teachers in the medical colleges are properly paid and they are provided with adequate amenities and are retained in teaching appointments upto the age of 60 years.

The Council appointed Visitors to inspect the following institutions on behalf of this Council : 1. Madurai Medical College, Madurai. 2. Bankura S. Medical College, Bankura. 3. Medical College, Ranchi. 4. Medical College, Bangalore. 5. Medical College, Kanpur. 6. Gandhi Medical College, Hyderabad-Dn. 7. Osmania Medical College, Hyderabad-Dn.

Anti-Filaria Drive

A vigorous anti-filaria drive is soon to be launched in the city by the Nagpur Municipal Corporation for which a provision of Rs. 1·5 lakhs has been made in the annual budget.

A recent survey undertaken by the Health Department of the State Government had shown that about 15 per cent of the city's population had filaria.

The Government of India has agreed to meet all the costs of the drive provided the Corporation agrees to meet the operational costs estimated at Rs. 1·5 lakhs per year.

Control of Diseases in India

The Union Health Minister said that the Government had taken active steps to control malaria and its plans for the control of filariasis had fairly advanced.

She added that the Government was embarking on a great adventure in the control of tuberculosis and leprosy also.

Declaring open the new golden jubilee block of the Pasteur Institute, Coonoor, the Health Minister said : "We have now trained personnel to deal with these diseases and have some idea of the steps we have to take towards the eradication of the scourges."

She also said the Government was considering a proposal to establish a comprehensive institute for the study of virology in all its aspects in order to combat the virus problem which, in recent time, has assumed an alarming significance. It would be the Government's attempt to create different centres for virus research in various research institutes as well as in medical colleges.

CORRESPONDENCE

The Editor is not responsible for the views expressed by correspondents

Vitamins A and D in Herpes Zoster and Chickenpox

SIR,—After using vitamins A and D successfully in some cases of herpes zoster I tried them in cases of chickenpox also, because it is believed that the virus in both of these is the same.

I injected 2 ampoules of 1 c.c. each of deka dexolin (Glaxo). Only one injection was given irrespective of the age. Even children of about one year were given the same dose. Both in herpes zoster as well as in chickenpox the eruptions dried up in a day or two. No new eruptions were noticed after injection. The temperature in chickenpox cases settled down in about 24-48 hours.

The results were most gratifying. I never before obtained such results in herpes zoster with pituitary, ergot preparations, liver extract, vitamin B_{12} or the broad spectrum antibiotics and in chickenpox with vitamin C 500 mg. 4 hourly.

I would like my colleagues to use it and publish the results. I am etc.

New Delhi. (DR.) J. R. KARWAL.

REVIEWS

Strahlendosis und Strahlenwirkung—Von. Prof. Dr. B. Rajewsky, Frankfurt/M. Unter Mitarbeit von K. Aurand, O. Hug, H. Mergler, H. Muth, H. Pauly, A. Schraub, E. Six, I. Wolf, Max-Planck-Institut für Biophysik, Frankfurt/M. 2., verbesserte und vermehrte Auflage, 1956. XVI, 486 Seiten, 8°, abwaschb. Plastikeinband DM. 36. Georg Thieme Verlag, Stuttgart, Germany.

Radiation Doses and Radiation Effect—By Prof. Dr. B. Rajewsky with the co-operation of K. Aurand, O. Hug, H. Mergler, H. Muth, H. Pauly, A. Schraub, E. Six, I. Wolf. Max-Planck-Institute for Biophysics, Frankfut/M. 2nd edition, 1956, XVI, 486 pages, 8°, price: 36 Mark. Georg Thieme Publishers, Stuttgart, Germany.

This very useful book is already in its second edition. It consists of a collection of tables containing data on the relation between doses and effect of radiation. The introduction discusses briefly the different kinds of radiation known to influence living matter and the effect on the haemopoietic system, the skin, their relation to the causation of cancer and the genetic effects. The tables are a remarkable collection of known radiation data skillfully presented for immediate use. Data in relation to man as well as animals are listed. Symptoms to be expected in man after a single radiation insult of different quantities are summarised from the available literature and presented in table form. The amount of radiation received during the taking of x-rays of different parts of the body is recorded so that every doctor can look up to how much radiation he exposes his patient by taking an x-ray of his sinuses (upto 75 r) or his stomach (between 1·5 and 3 r).

A detailed discussion of the radiation effects at different doses on the individual organs of different animals is useful for the biologist. Tables containing the elements, their isotopes, the half life, the kind and energy of their radiation are useful to find in such a book. 256 pages of the book contain a bibliography of 7000 articles of the world literature relating to radiation doses and effect, in which papers that appeared up to December 1955 are listed.

This is a handbook useful to all biologists and doctors working with radiation.

Die Behandlung des Bluthochdrucks—Von. Prof. Dr. L. Hantschmann, Remscheid. 1956. VIII, 92 Seiten, 9 Abbildungen, Gr.-8°, kartoniert DM 12.

Treatment of Hypertension (in German)—By Prof. Dr. L. Hantschmann, Chief Physician, Municipal Hospital, Remscheid. VIII, 92 pp.; 9 illustr., DM 12. Georg Thieme, 1956.

This monograph represents a successful attempt to cover the subject adequately for all practical purposes in a comparatively small space. As the same author published a separate treatise on "Pathologically raised blood pressure" (G. Thieme, 1952) where aetiology and pathogenesis have been dealt with in detail, the present booklet contains only as much about these problems as is necessary for the understanding of therapeutic procedures.

The first 26 pages survey diagnosis and differential diagnosis of hypertension which is discussed in connection with cardiovascular, neurological, endocrine and infectious diseases, hypertension of renal origin, in pregnancy and, finally, essential hypertension.

The other 60 pages deal with treatment according to the same seven varieties of hypertension. Most of this chapter is concerned with the therapy of essential hypertension and discusses the influence of psychological factors, regulation of physical activities and sport, including physiotherapy, and diet, where good results have been achieved by the author with salt-free, mixed diet, equal to those obtained by Kempner's rice diet. Nearly 30 pages are devoted to treatment with iodides and rhodan, the sympathicolytic drugs, such as dibenamin, the dihydrated ergot alkaloids, hydrazine phthalazines and rauwolfia preparations. The last mentioned group is highly appreciated as reasonably effective in the majority of cases and practically non-toxic; the author saw no difference between the effect of the total alkaloids of rauwolfia and reserpine. Then follow discussions of the ganglion blocking agents, the veratrum alkaloids, heparin, and combinations of apresoline with a ganglion blocker, which is risky, and apresoline with reserpine of which the author saw encouraging results which require a longer follow-up for final evaluation.

Since 1935 the author treated some cases of essential hypertension of not more than 2 years' duration and nor-

mal kidney function with x-ray irradiation of the pituitary gland which occasionally achieved stabilisation of the blood pressure at normal levels.

Sympathectomy is recommended for selected cases of the younger age group in the beginning of the malignant phase, while adrenalectomy is rejected.

Finally, the treatment of the effects of hypertension on heart, blood vessels, brain and kidney is outlined. Four pages of references and an index conclude this paper bound volume which should prove helpful to medical students and practitioners alike.

The Practice of Medicine—Editor Jonathan Campbell Meakins. Sixth edition. C. V. Mosby Company, St. Louis, 1956. 10" x 6½", pp. 1916, price $16.00.

This is an excellent students' companion, in which a broad idea about medicine in general has been well presented. For serious study however the book lacks in depth and details. The reviewer does not agree with the statement that the diphtheritic membrane *frequently* increases in extent for 24 hours after administration of antitoxin and that penicillin makes no difference in the incidence of complications. China has wiped out cholera and therefore its inclusion as a special example where cholera is epidemic is not proper. Details about dosage of administration of toxoids for diphtheria and sulphones in the treatment of leprosy are wanting. There are a few lapses in the arrangement of references in alphabetical order. The colour reproduction (Fig. 23) is not in keeping with the otherwise excellent standard of printing and get up of the book. A chapter on rehabilitation and physiotherapy would have made the book more comprehensive.

International Record of Medicine and General Practice Clinics—Editor Felix Marti-Ibanez, M.D. A journal of MD Publications, Inc.; 30 East 60th Street, New York 22, N.Y., U.S.A. Subscription $11.00 a year. November 1956 issue; symposium on Medicine and Writing.

This issue represents Vol. 169, No. 11, of an old and well-known medical magazine whose title is to be changed to "International Record of Medicine" from January 1957. Six articles and an able editorial comprise the special symposium of this issue, besides which other interesting reading materials are offered in the 76 pages of text in this issue. The symposists have been well chosen and have together given us, in these pages, enjoyable and informative views on medicine and specially medical writing.

Illustrations of Bandaging and First Aid—Compiled by Lois Oakes, S.R.N., D.N. (Leeds and London). Fifth edition 1956. E. & S. Livingstone Ltd., Edinburgh and London. Board bound, 8¾" x 5½", 325 pages, illustrated with 396 photographs. Price 12s. 6d. net, registered postage 1s. 6d.

This is the fifth edition of a book which first appeared in 1940, with an additional Spanish edition in 1942. Intended primarily for the student nurses and dressers, this book with its large number of excellent photographs, serves the purpose admirably. Descriptive language has been kept to a minimum. A very useful and highly commendable book, also for junior house-officers.

Indian Journal of Dermatology, Vol. II, No. 1, October 1956. Editor—Prof. G. Panja, M.B., D.BACT., F.N.I., Published quarterly from 78 Dharamtala Street, Calcutta 13. Annual subscription—inland Rs. 8/-, foreign Rs. 12/-.

A newcomer in the field of medical jonrnals in India, this journal is now in its second year. Even so, the get-up, paper, types, printing and specially the quality of the articles are quite good indeed, and seem to have improved during the journal's one year of existence. A large number of reproductions of photographs and a few microphotographs have been incorporated. These have been well done and naturally enhance the value of a dermatological journal. With a little more attention to reading of the proofs, the printing mistakes could have been avoided.

We wish this journal continued healthy growth.

Fight Against Tuberculosis in India—By G. Goel. Published by the author from Maa Saraswati Tuberculosis Hospital, Mathura (U.P.).

In this small monograph the author presents the tuberculosis problem in India by a critical analysis of available statistics, and gives his personal views about "The Plan" to control it.

According to the author the five year development plan as suggested by the Standing Technical Committee of the Tuberculosis Association of India is very inadequate. He is very critical about the emphasis being laid more on B.C.G. vaccination programme and establishing more clinics than on increasing the hospital beds. According to the author the fundamental principle of controlling tuberculosis being isolation of all infective cases, it is essential to establish sufficient hospital beds for all infective cases, calculated to be 1·25 million a year in India. The author further calculates that about 600,000 beds will be enough to accommodate all infective cases and render them non-infective by modern drugs, on the assumption that each bed will serve 3 patients during the year, 3 months each.

After characterising the aims of adding 15,000 beds per annum as envisaged in the Second Five Year Plan as "Snail-pace-planning", the author in his own plan climbs down from 600,000 beds to 25,000 a year, and this also with an emphasis on "quantity rather than quality".

The author starts with the misconception of equating hospital beds with B.C.G. vaccination programme, as mentioned in his introduction and compares them on that basis in the anti-tuberculosis plan.

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* *Practitioner* (1954) 172, 643-4

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REFERENCES:

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Dr. P. S. Mathur, M.D., D.C.H. "Some Clinical Observations on the Use of Liv. 52 (an indigenous drug) in Cases of Cirrhosis of Liver in Children." *Current Medical Practice, 1957, 2, 107.*

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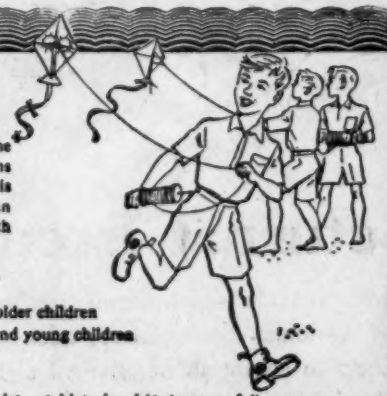

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SUPPLEMENT
Journal of the Indian Medical Association

VOL. 28, No. 9 CALCUTTA MAY 1, 1957

XXI UTTAR PRADESH STATE MEDICAL CONFERENCE, 1956, DEHRA DUN

The Twentyfirst Session of the Uttar Pradesh State Medical Conference was held under the auspices of the Uttar Pradesh State Branch of the Indian Medical Association on 27th and 28th October, 1956 at Dehra Dun. Dr. A. C. Ukil, President of the Indian Medical Association for 1955-56, inaugurated the Conference. The Medical Profession of the Pradesh was well represented at the Conference. There was also a fair attendance of representatives of the Local Branches. The Chairman of the Reception Committee Dr. Mitra Nand accorded a hearty welcome to the guests and delegates.

The Pharmaceutical Exhibition held in this connection was well arranged. This was opened by Dr. K. M. Lall, Director, Medical and Health Services, Uttar Pradesh, Lucknow. The Scientific Section was inaugurated by Dr. Durga Prasad and nine papers were read and discussed. Dr. S. N. Mathur, the president of the conference, in course of his address said :

To my mind the life of a doctor can be divided into three sectors :—

(*a*) In Duties to the Public,
(*b*) In Duties to the State,
(*c*) In Duties to the Family.

Everyone may not agree with this classification or its order and strictly speaking (*a*) and (*b*) should be grouped in one class but that is an ideal to be achieved in the future.

DUTY TO THE PUBLIC

It will be idle for me to emphasise the importance of the doctor-patient relationship to this learned conference except to reiterate it. This relationship requires also a revaluation in our present day life in the sense that the duty of a doctor does not end with the cure of a particular ailment. It should be our most important object to follow up that ailment to its source and tackle that source so that there may not be a recurrence of that disease. In other words the emphasis should be more on the preventive than on the curative side of the disease. The ideas of the existence of separate health and treatment units of the profession are not only archaic but also inefficient and must be given up as soon as possible. In this connection it is encouraging to point out that our State Government has attempted to combine the administration of the Medical and Health Services at the top level but that is not enough. The need is for the field work to be done through an integrated personnel who will be competent to carry out both the preventive and curative aspects of the disease. This has not yet been done and the problem cannot be said to have been genuinely tackled by the State.

It is also encouraging to know that several branches of the Indian Medical Association, in this State, such as at Lucknow, engage themselves in carrying on preventive inoculations and mass education and propaganda at times of the epidemics. The Banaras Branch regularly publishes a paper—a health journal *Apka Swasthya*. It is deservedly a very popular magazine, with a wide circulation, and being the only one of its kind deserves still wider appreciation. I would commend these services to the other branches for adoption with benefit to the community. I would at the same time confess to a general absence of application of this preventive line of treatment among most of the members of the profession. I don't know if it is due to apathy or overwork. I would like to think the latter is the reason but may I be permitted to emphasise again that it is the duty of a doctor to educate the public in the preventive aspect of the particular disease under treatment.

I am sure all of you have experienced that in course of time a doctor comes to be recognized as one of the

DR. MITRA NAND, THE CHAIRMAN OF THE RECEPTION COMMITTEE.

members of the patient's family. That shows a feeling of confidence in the professional ability and trust in the doctor's integrity and is at once the highest privilege and glory of the medical profession. May the profession be always guided by these age-old ideals in its conduct in the future!

Duty to the State

It is in this category that the doctor has to remodel his work since the dawn of Independence. The ideal to be achieved is the perfect health of the nation by correcting all the defects which may undermine it. This work entails a large amount of preventive, educative propaganda and social work. The State is, no doubt, the legal custodian of the health of the Nation but the resources at its command are bound to be limited—certainly in these early years. It is only right that the profession should render as much aid in achieving this ideal as it can possibly do.

Besides the duty of a doctor in tracing and tackling the disease to its source, amongst his own patients, there are numerous other ways in which they can help, e.g., honorary services to hospitals and clinics; mobile dispensaries; mass inoculations; educative propaganda through lectures to the public and in educational institutions; radio broadcasts and popular articles in newspapers and magazines and cinemas. I would suggest the formation of small committees in each branch of the Indian Medical Association for the particular sections of service. The members of the committee will contact and co-operate with the corresponding State organization to carry it out as widely as possible. I am not in favour of joining any paid service but of voluntary honorary work only; the latter having the advantage of maintaining one's independence and initiative.

There have been complaints against honorary workers as well as the State authorities in this relationship. A great many depend on individual relationship but I believe that, given a reasonable amount of give and take, there are no insurmountable obstacles in this arrangement. I am, of course, assuming the conditions to be reasonable, honest and democratic.

It is also necessary for the State to ensure satisfactory conditions, in which the practitioner can follow his legitimate profession and at the same time render honorary services to the State. The imposition of irritating conditions in the Drugs Act, Sales Tax, maintenance of rosters and frequent periodical returns, inspections and auditing, can only change a peaceful honourable profession into one of a money-making business. I believe the State will not lose any portion of its revenue by a judicious adjustment of these conditions. On the other hand it will gain the goodwill and co-operation of a section of the community which is so important to the life of the nation.

In order to ensure fair and reasonable laws and treatment at the hands of the State it is essential that the Indian Medical Association must be strong. Everyone respects strength in this world. It is thus in our own interest that all members of the profession in State service or of independent profession, should join the Association and make it the sole mouthpiece of their opinion, an opinion formulated after discussions amongst the collective brainpower of the State's medical profession. The State will be compelled to consult such a body in all its schemes—either of short or long term—which affect the health of the Nation and will not be able to ignore it as they have done in the first and second Five Year Plans. I will maintain, still further, that it will be impossible for the State to work its medical plans without the co-operation and assistance of the whole profession.

To ensure satisfactory and continued medical aid in a State, there should be adequate arrangements for medical education, training and examinations. We cannot complain, in this State, of any dearth of medical teaching institutions, with two old colleges, another in process of development and probably two others in the future. There is even an opinion current that there may be too many. But that stage has not yet been reached. It will be useful for the medical practitioners to be able to join periodic Refresher Courses in the different subjects in these colleges, for short periods. This will help them to keep abreast of recent advances in their subject and will help in improving the quality of medical assistance to the public. The Refresher Course for practitioners should be a regular feature of post-graduate education in all medical colleges of the country.

The general medical curriculum for the training of the under-graduate is in the process of revision by a broad-based committee appointed by the Union Government. I trust the new curriculum will remove all the superfluous portions which are not useful for a general practitioner and only burden his memory with useless data. What the country needs most is sound general practitioners in large numbers.

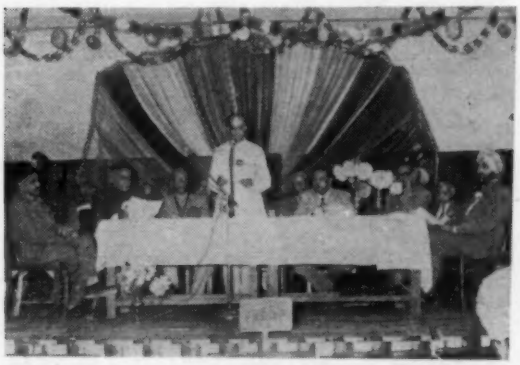
There is general agreement in the country about the desirability of a period of compulsory internship after qualifying. I trust the plan will soon receive practical application at the hands of the authorities.

The training of undergraduates in rural medical work is a far more complicated problem. It may be possible to send them out—in batches of two—attached to the various mobile dispensaries of the State for three months. This training combined with that they have received in the out-patients' departments will be quite sufficiently a true picture of what type of work they will have to face as a private practitioner. It is expected that they will be paid a suitable stipend during their training as interns or rural relief—as they will be serving the State in this period.

Dr. S. N. Mathur, the President of the Conference.

One word about the greatly debated question of stoppage of private practice amongst teachers of medical colleges and State service. A lot of discussion has been going on for the last six months and yet no definite decision has been reached. The question bristles with difficulties. But it must be admitted that there cannot be marked improvement in teaching and research work till the teachers continue to be low paid and allowed private practice. The standards have steadily been falling and the only effective method is to pay the teachers well and not to allow them any practice. All other difficulties are secondary in importance, and can be solved in other ways.

In my humble opinion, a moderate degree of military training will be very useful to the students of medicine. During college days, this training will promote discipline, develop better physique and foster an *esprit de corps*—which will be a valuable asset to a busy medical practitioner of the future. The practitioner might also maintain his liaison with the armed forces by joining the Volunteer Auxiliary Services, which it should be of definite mutual advantage to the forces and the specialist personnel if these specialist civilians are trained in military work for a short period every year. Besides the obvious advantages of such a training, the larger specialist hospitals in every country serve as large base hospitals in times of war and we can follow such a method with great advantage.



A VIEW OF THE DAIS—THE CONFERENCE IS IN PROGRESS.

RURAL MEDICAL RELIEF

The vast population of the nation resides in villages and it is most important for medical relief to be available to them. A modest beginning has already been made by the State Government in starting dispensaries, in increasingly large numbers in the rural areas and providing mobile dispensaries. All these have to be staffed with medical personnel. Everyone is now agreed that such a personnel should be compensated adequately for the absence of many normal facilities for life, e.g., residences, roads, schools for their children etc. Some States like the Bengal Government have doubled the salaries of officers assigned to these posts. This policy may be adopted in our State as well. I believe, with the training of an ever increasing number of medical personnel, it will soon be quite easy to staff our rural dispensaries. The general practitioner can also render valuable help by going out in rural areas—each one once a month or so—and render free medical help. Different zones may be mapped out and treated in different months and thus a fairly wide area will be covered. I have been advocating this scheme to my fellow practitioners for the last few years and it has been adopted in some districts.

NATIONAL HEALTH SERVICE

The establishment of such a service is the aim of every government, but its adoption is so expensive that it cannot be easily established. Neither are our medical and medicinal resources of sufficient strength to meet the requirements of the nation. We will have to await the results of establishment of a large number of heavy industries throughout the country which will increase the national income and reduce the outflow of national wealth and thus add to the existing agricultural resources. There will be an organized labour and industry which can be utilized for promotion of national health schemes. Meanwhile we can watch the progress of the States Health Insurance Schemes and learn how to model the health services of the future. The medical profession of the whole country will meet a great challenge when the health services are being established and I hope the profession will be sufficiently organized and strong by that time to adequately meet that challenge. This has been done in the United Kingdom and we should learn our lesson from them.

MEDICAL COUNCIL ACT

This is in the process of revision and has already been passed by the Rajya Sabha. You are aware that the Association has made several representations to the Government in the past, for the establishment of a common register for all types of medical practitioners, representatives on the council, etc. The last occasion was in August when a deputation waited on the Hon'ble Minister Raj Kumari Amrit Kaur. We are awaiting with eagerness the results of the representation and their incorporation or not in the new Act.

MANUFACTURE OF INSTRUMENTS AND DRUGS

The modern system of medicine requires medicines and instruments which have all to be imported from foreign countries. This greatly adds to their cost and hence to the general cost of the medical treatment. This is an argument always advanced against this system. This can only be answered by starting these manufactures in our own country. Their cost will come down considerably and the scheme will offer opportunities to a large number of medical personnel for employment and research in different fields.

We are all, unfortunately, familiar with the drugs of uncertain specifications and quality and sometimes totally spurious ones, which are found in the market. These are not only of foreign manufacture but also of Indian origin. It is imperative that legal action be taken against all such offenders and deterrent sentences passed on them.

NURSING PROFESSION

This profession is being increasingly and rightly recognized in our country as the necessary complement to the medical profession in combating diseases and sufferings. The need for properly trained nurses, in every branch of medical treatment is both urgent and extensive. It is only correct, therefore, that there must be provision for the training of nurses in very large numbers and the conditions of their service and work should be adequate to satisfy the best talent that will adopt this profession.

DUTY TO THE FAMILY

The realisation of one's self is the only ideal which has a permanent value in this life and if you believe it, in the life to come. All the other worldly values of name and fame, wealth and honour fade into complete oblivion in time. I would commend to you this ideal

to follow in your daily life, discharge your domestic obligations but always foster the purity and growth of your soul.

* * * * *

The following resolutions were passed at the Conference :

1. This Conference places on record its deep sense of sorrow at the demise of the following members of the profession during 1955-56 and conveys heartfelt sympathy to the members of the bereaved families :—1. Dr. S. N. Mukherji, Banaras; 2. Dr. H. L. Dube, Meerut; 3. Dr. P. N. Singh, Agra; 4. Dr. B. N. Jha, Allahabad; 5. Dr. L. M. Basu, Allahabad; 6. Dr. C. M. Bose, Banaras; 7. Dr. S. N. Misra, Kanpur; 8. Dr. Fakirey Ram, Kanpur; 9. Dr. S. C. Sen, Shahjahanpur; 10. Dr. N. C. De, Sultanpur; 11. Dr. R. S. Lal, Agra; 12. Dr. R. P. Kapil, Bareilly.

2. This Conference views with great concern, the growing unemployment among the qualified medical men and women in the country. It strongly urges upon the State Government to take necessary measures for immediate relief of this unemployment.

3. Resolved that this Conference protests against inclusion of the term "dispensing" of prescription by Registered Medical Practitioner as "manufacture" of medicines and subjecting the same to Sales Tax.

4. This Conference recommends to Life Insurance Corporation of India to fix the scales of medical fees at a uniform rate at Rs. 16/- per case, as the work in all the cases is practically the same.

5. This Conference appeals to all the Registered Medical Practitioners to enrol themselves as members of the Indian Medical Association and thus make it strong. It also requests all the members to approach all non-member medical practitioners registered under Indian Medical Degree Act, 1916 and bring them in the fold of the Association as soon as possible.

6. Whereas there is demand of trained personnel in anaesthesia and trained and fully qualified anaesthetists are not available even for Medical College Hospitals, be it resolved that the Government should take early steps to create departments of anaesthesiology in the medical colleges of Lucknow and Agra.

7. Resolved that the Association welcomes the recommendation of the Medical Council of India to have whole-time professors in social medicine and public health and hygiene, and also whole-time professors in forensic medicine and requests the Government and Lucknow University authorities to create these professorships at an early date.

8. Resolved that medical technicians including technicians in Radiology be trained as an auxiliary medical personnel to meet the growing demand, and training facilities should be provided in the medical colleges at Lucknow and Agra.

9. Resolved that lectureship in Medical Statistics be created in the department of social medicine to teach medical statistics, assist and guide in medical research.

10. Whereas small-pox, a disease which still ravages and takes a heavy toll of human life in this State, can be eradicated and brought under control, be it resolved that mass vaccinations of the whole population through volunteers be carried out in the State. The control of small-pox should form a major campaign in the Second-Five-Year Plan.

11. The Association welcomes the move of the Director of Medical and Health Services to study and investigate the aetiology, morbidity and epidemiology of acute gastroenteritis and requests the Government to implement the scheme at an early date and to keep the Association informed of the results of the research undertaken.

12. Whereas special teams are working to control and treat Leprosy, Kala-azar, and Malaria, be it resolved that a team of specialists in Bacteriology, Medicine and Epidemiology should survey and evaluate the results so far achieved by the units, and suggest further measures, if any, to be adopted to control the above diseases.

13. Whereas B.C.G. has been inoculated to the tuberculin negative population of this State for the last 5 years or so, be it resolved that a team consisting of specialists in Bacteriology, Medicine, Tuberculosis, and Epidemiology should evaluate the results of the protective value of B.C.G. and its usefulness.

14. Resolved that the allowance for post-graduate diplomas and degree other than diploma in Public Health be given to the members of Public Health Services as is done in P.M.S.

15. Resolved that there should be one grade of Provincial Medical Service, 300-1200 and the seniormost Medical Officer in district hospital should act as the superintendent and the Government be requested to implement it

16. Whereas the Government of Uttar Pradesh intends to start limited voluntary Health Insurance Scheme in 2 towns in the State without facility for diagnostic aids, specialist services and hospitalization, be it resolved that this Conference urges upon the Government that it should establish comprehensive health service designed to secure improvement in physical and mental health of the people, and the prevention, diagnosis and treatment of illness, so that benefits are available to every citizen as a matter of right irrespective of his capacity to pay for insurance.

17. This Conference notes with regret that the District Hospital Advisory Committees have not been functioning properly and suggests the Government should take urgent steps in the matter and it further resolved that the Secretaries of the committees should submit regular reports to the Government.

18. This Conference strongly urges upon the State Government

(*a*) That the cadre of medical personnel employed to run the Employees' State Insurance Scheme should be separated from the general cadre of the P.M.S. I and P.M.S. II Medical cadre.

(*b*) That the pay and emoluments of such cadre should be adequate with sufficient compensatory allowance in lieu of practice, so as to attract proper and well qualified medical men.

(*c* That suitable residential quarters commensurate with the status of the cadre and other similar cadres should be provided instead of a house rent allowance as heretofore.

(*d*) That suitable conveyance should be provided at the expense of the State instead of present conveyance allowance.

BRANCH NOTES

ALMORA BRANCH –The annual meeting of the branch was held on 26-9-56. Nine members were present. To attract more members to the branch the subscription was reduced by Rs. 2/- per month for both local and outside members. Office-bearers for 1956-57 were elected with Dr. B. S. Darbari as president, Dr. M. Masih as secretary and Dr. D. N. Pant as joint secretary.

BANGALORE BRANCH –On 29-12-56, a meeting of the Managing Committee was held under the chairmanship of the President, Dr. D. A. Lakshmana Rao. The usual routine business was done.

On 27-1-57, Dr. Helen Taussig addressed the members on 'Congenital Heart Diseases', Dr. Venkatasubba Rao, Director of Medical Services in Mysore presided.

On 6-2-57, a meeting of the Managing Committee was held under the chairmanship of Dr. V. N. Krishnamurthy, vice-president of the Association. It was resolved to give 'tea' to the delegates of the 18th All India Ophthalmic Conference.

On 23-2-57, the delegates of the 18th Ophthalmic Conference were entertained to tea.

On 16-3-57, a meeting of the Managing Committee of the branch was held under the chairmanship of Dr. D. A. Lakshmana Rao, president.

Dr. T. S. Shetty of Madras addressed the members on "Can Deafness be cured". Dr. T. Manickam presided.

BELLARY BRANCH—A clinical meeting was held on 9-2-57 with Dr. S. R. Gorur in the chair. Eighteen members were present. Dr. Y. P. Vittal spoke on "Sinusitis of the Antrum of Highmore".

BHAGALPUR BRANCH—The annual meeting of the branch was held on 10-2-57 with Dr. (Miss) S. Tirki in the chair Dr. B. Mukherjee was elected the president and Dr. (Capt.) B. Prasad, the hony. secretary for the current year. The annual report shows that 67 members were on the roll. Six general meetings were held in which clinical subjects were also discussed. The branch observed Health Week in March '56.

BOMBAY TERRITORIAL BRANCH—The annual report of the branch for the years ending 30 September '55 and 30 September '56 show that the Territorial Council met 15 times and 10 times jointly with the Managing Committee of the Bombay branch, I.M.A., during the years under report. The 2nd annual conference was held on 19-20 March 1955 and the 3rd on 31-3-56—1-4-56. Both the conferences were very successful.

CACHAR BRANCH—A meeting of the branch was held on 23-2-57. Twelve members were present. Dr. J. N. Chakravarti presided. Dr. D. N. Chakraborty was elected hony. secretary in place of Dr. S. P. Nath, elected president of the Assam State Branch. A paper on Vertigo was read by Dr. S. P. Nath.

CHETTINAD BRANCH—A meeting of the branch was held on 19-1-57. Dr. (Miss) H. Eriksson presided. Dr. D S. Manuel gave a talk of "ACTH in Ophthalmic Practice".

A meeting of the branch was held on 23-2-57 with Dr. (Miss) H. Eriksson in the chair. Dr. D. A. Israel read a case report on "Perinephric Abscess". Dr. (Miss) Eriksson spoke briefly about "Moniliasis".

COIMBATORE BRANCH—A meeting of the branch was held on 3-12-56. Dr. D. Sundareswaran presided. Eighty members were present. Dr. M. V. Krishnamoorthy spoke on "Rheumatic Diseases in children and their consequence".

A meeting of the branch was held on 12-1-57 with Dr. T. V. Sivanandam in the chair. Ninety members were present. Dr. C. K. Padmanabha Menon, Superintendent, Erskine Hospital, Madurai, spoke on "Surgery in the Aged"

A meeting of the branch was held on 31-3-57. Dr. D. Sundareswaran presided. Eighty members were present. Dr. Mrs. Anna Vareed spoke on "The Recent Trends in Caesarean Section".

COOCH BEHAR BRANCH—The annual meeting of the branch was held on 15-12-56. Forty-two members were present. The annual report of the secretary was adopted. Dr. S. K. Basu read a paper on "A plea to the study of pharmacological actions of common salt". Office-bearers for 1956-57 were elected with Dr. M. P. Talukdar as president, Dr. B. L. Sarkar as hony. secretary and Drs. N. C. Sen Gupta and A. B. Guha as joint secretaries. An academic sub-committee was formed. A building sub-committee was also formed. The Life Insurance Corporation was requested to retain in their list the names of all medical examiners of the district.

DALTONGANJ BRANCH—A meeting of the branch was held on 22-11-56 with Dr. R. Sinha, Civil Surgeon, Palamau, in the chair. Thirteen members were present. Dr. R. L. Ghose was unanimously elected as a member of the District Tuberculosis Association from this branch.

A meeting of this branch was held on 15-12-56. Dr. R. Sinha, Civil Surgeon, was in the chair. Eight members were present.

A farewell tea party was given in honour of Dr. S. Sinha, Ex-President of this branch and Civil Surgeon of this district on 2-2-57. Dr. A. Chattoraj, in-coming Civil Surgeon of this district was accorded a welcome. The Secretary spoke about the good work done by Dr. R. Sinha to this association. Dr. R. Sinha gave a suitable reply.

Immediately after, another meeting was held in which Dr. A. Chattoraj, the Civil Surgeon, was requested to be the president of this association to which he kindly agreed.

A meeting of this branch was held on 3-3-57. Nineteen members were present in which Programme of the "Health Week Celebration" from 24-3-57 to 30-3-57 was discussed and a sub-committee was formed with five members. Dr. A. Chattoraj presided.

DAVANGERE BRANCH—A meeting of the branch was held on 17-11-56. Films on Vitamin Deficiency in (1) Pregnancy, (2) Living Blood and (3) Thrombosis and Embolism was shown.

A meeting was held on 31-1-57. Dr. C. Bhashyam demonstrated the following cases: (1) Unusual case of Rickets in a child of one year, (2) Fracture Patella with Radiograms, (3) Testicular Tumour associated with Hernia and Sterility. Dr. K. Karibasubba presided.

A meeting was held on 19-2-57, with Dr. M. A. Narayana Iyengar in the chair. Dr. C. Bhashyam demonstrated (a) A case of Paraplegia, (b) A complicated case of Inguinoscrotal Hernia, and Dr. E. Chamaraj described in detail an unusual case of Cancer Liver which ended fatally.

DHULIA BRANCH—A special meeting of the branch was held on 9-11-56 with Dr. B. B. Kertane in the chair. Dr. V. L. Sathe, the founder of the West Khandesh Medical Union addressed the meeting.

A meeting was held on 9-12-56 with Dr. Mrs. Sumatibai Godbole in the chair. The situation arising out of the selection of medical examiners for the Life Insurance Corporation in India was discussed.

A meeting was held on 27-1-57 with Dr. Mahajani in the chair. The usual business was transacted.

A meeting was held on 10-3-57. The election of a president and vice-president was held.

ERODE BRANCH—The annual meeting of the branch was held and office-bearers for the current year were elected with Dr. (Capt.) T. S. Bhaskaran as president and Dr. M. N. Shenoy as secretary. Dr. T. S. Srinivasan spoke on "Stress and Disease".

A meeting of the branch was held on 20-2-57 in the Erode Government Hospital. Twenty-six doctors were present. Dr. C. R. Thiruvengadam took the doctors round and demonstrated and discussed interesting cases.

FEROZEPUR BRANCH—A meeting of the branch was held on 22-1-57 under the presidentship of Dr. K. Saharan. Fourteen members were present. Dr. Sudershan spoke on Hypertension and its modern treatment.

A meeting was held on 10-2-57 along with the members of the District Clinical Association. Dr. Manmohan Singh, Civil Surgeon, Ferozepore gave a demonstration on Electrocardiography and its clinical importance in various diseases. Dr. C. P. Sethi explained a few x-ray films.

GORAKHPUR BRANCH—To commemorate 25 years of its useful existence, the branch celebrated Silver Jubilee on 22-12-56. After *Bandemataram* was sung, the convener, Capt. S. C. Banerjee accorded a hearty welcome to the guests and members of the association. Sri B. P. Bagchi, Commissioner of Gorakhpur Division, inaugurated the celebration. Dr. A. S. Bhalla, the general secretary of the branch read the progress report of the branch for the last 25 years. Dr. K. N. Lahari, president of the branch appealed in his speech to the Gov-

THE SILVER JUBILEE CELEBRATION OF THE GORAKHPUR BRANCH STARTS WITH "BANDE-MATARAM".

THE DOCTORS AND VISITORS ASSEMBLED ON THE OCCASION OF THE SILVER JUBILEE CELEBRATION.

ernment of U.P. to establish an Improvement Trust in the city for its further improvement in the II Five Year Plan period.

Next the following reviews were read : (1) Review of Medical Progress for the last 25 years specially in Gorakhpur by Dr. M. N. Chakravarti, (2) Review of Progress of (a) Preventive Medicine by Dr. J. N. Mathur, (b) Medicine by Dr. S. P. Agarwal, (c) Surgery by Dr. S. S. Verma, (d) Ophthalmology by Dr. G. K. Saraf, (e) Gynaecology by Dr. K. N. Srivastava, (f) Dentistry by Dr. D. V. Chopra, (g) Pathology by Dr. B. P. Dube, (h) Tuberculosis by Major Ramkrishna.

About 200 medical men and guests were present in the celebration.

A meeting of the branch was held on 23-2-57 with Dr. K. N. Lahari in the chair. Thirty-six members were present. The following cases were shown, (1) Left eye squint operation by Dr. B. M. Verma, (2) Barly loss of Retinitis Pigmentosa by Dr. G. K. Saraf, (3) Thyrotoxicosis complicated with Ascariasis by Dr. H. K. Saraf and Dr. Dubey, (4) Polyuria without sugar by Dr. S. P. Agrawal, (5) Bales's Disease by Dr. N. M. Seth, (6) Skiagrams in Pneumonia and Pleural Effusion by Major Ramakrishna.

A meeting of the branch was held on 20-3-57. Capt. Rajendra Prasad presided. Forty-four members were present. The following cases were discussed : (1) Exostosis by Capt. A. K. Lahiri, (2) Lupus Erythematosis by Dr. B. P. Dube, (3) Acute Combined Degeneration with Paraplegia by Dr. S. P. Agarwal, (4) Melanoderma with scattered pigmentation over the face and other parts of the body by Dr. S. P. Agarwal, (5) Blindness of a child due to Birth Injury by Dr. N. M. Seth, (6) "How to examine Stools"—a paper by Dr. B. P. Dube.

HYDERABAD PRADESH BRANCH—The annual report of the branch for 1955-56 shows that there were 592 members on the roll as against 568 in the previous year. Seven meetings of the Working Committee were held. Five sub-committees on special subjects worked during the year.

GREAT BRITAIN BRANCH—The annual general meeting of the I.M.A., Great Britain Branch, was held on 20-1-57. Office-bearers for 1957 were elected with Dr. G. P. Barua as president and Dr. P. C. Bose and Dr. C. R. Amin as hony. secretaries.

The Annual Dinner and Dance of the Indian Medical Association of Great Britain was held at the Cumberland Hotel, London, W. 1 on the 4th April 1957. Sir Francis Walshe was the principal guest; other guests were Col. and Mrs. Ahuja of India House and Col. and Mrs. Vizafdar from Bombay. There was a gathering of a hundred persons.

GURDASPUR BRANCH—A meeting of the branch was held on 24-11-56 under the chairmanship of Dr. S. Singh. Eleven doctors were present. Dr. B. Singh Sachdev read a paper on "Diagnostic Measures in Pulmonary Tuberculosis and their limitations". Dr. Santokh Singh, Civil Surgeon, Gurdaspur narrated an interesting case of depressed fracture of the skull.

A meeting was held on 19-1-57. Twenty doctors were present. Dr. M. L. Blaggana, Asst. Surgeon, Gurdaspur demonstrated some cases. Dr. B. Singh Sachdev of T. B. Clinic Gurdaspur gave a brief account of the International Tuberculosis Conference held at Delhi.

JAGATDAL BRANCH—A clinical meeting of the branch was held on 16-2-57. Dr. S. Mukherjee, Prof. of Experimental Medical Science, Medical College, Calcutta, spoke on "Modern Treatment of Industrial Hazards."

JAMTARA BRANCH—A meeting of the branch was held on 22-2-57 with Dr. G. S. P. Sinha in the chair. Ten members were present. Dr. R Mukherjee of Asansol spoke on the aetiology, clinical symptoms, differential diagnosis and treatment of Epilepsy. He also talked on the importance of medical association. A local Health Committee was formed for the celebration of Health Week.

JAMUI BRANCH—A meeting of the branch was held on 24-2-57 with Dr. N. M. Mukherjee in the chair. Nine members were present. A sub-committee was formed to arrange for the celebration of Health Week, Dr. S. D. N. Sinha was elected as vice-president in place of Dr. B. N. Pandaya, transferred.

JAMNAGAR BRANCH—The annual meeting of the branch was held on 22-9-56. Dr. P. C. Rakshit, Principal, M. P. S. Medical College, Jamnagar was elected president and Dr. S. S. Narang, hony. secretary. The following scientific meeting was held. On 16-10-56, Dr. (Mrs.) S. Gore spoke on Family Planning. On 19-11-56, Dr. K. C. Mehta, Dy. Surgeon, M. P. S. Medical College spoke on Recent Advances in the Diagnosis and Treatment of Hemiplegia with special reference to Cerebral Thrombosis. On 31-1-57, Dr. L. R. Pathak, Dy. Surgeon, M. P. S. Medical College spoke on Acute Abdomen. On 14-2-57, Dr. J. M. Bhatt spoke on Cirrhosis of Liver in Infants.

A general meeting was held on 5-1-57, it was decided to appoint two joint secretaries instead of one. Dr. S. M. Baxi and Dr. H. C. Srivastava were elected joint secretaries.

A seminar of Peptic Ulcer was held on 19-3-57 with Dr. P. C. Rakshit in the chair. The following members took part, Dr. C. B. Bhargava—Anatomy; Dr. M. V. S. Achar—Physioloyy; Dr. B. C. Sangal—Aetiology and Pathology; Dr. R. P. Bhatt—Symptom—Aetiology and Differential Diagnosis; Dr. S. M. Baxi—Treatment (Medical); Dr. L. R. Pathak—Treatment (Surgical).

JODHPUR BRANCH—A meeting of the branch was held on 22-3-57. Dr. Ahluwalia presided. Dr. Gangaram being absent, his assistant spoke on the various types of dislocations and gave new methods of Surgical Operation performed lately by Dr. Gangaram. Next Dr. Pitambardayal Mathur discussed the problem of differential diagnosis of Jaundice.

A meeting of the branch was held on 1-3-57. Dr. H. I. Hathi presided. Dr. R. S. Bhatia spoke on his personal observations of 3 cases of Hydatid Cyst of Liver. Dr. Kotia demonstrated a case of "Obstructed Jaundice".

JAYSINGPUR BRANCH—A meeting was held on 29-3-57. Office-bearers for 1956-57 were elected with Dr. M. K. Lokhande as president and Dr. F. A. Deane as hony. secretary.

KALYANI BRANCH—A meeting of the branch was held on 7-2-57 with Dr. B. Mukherjee in the chair. The hony. joint secretary of the Bengal Provincial Branch was requested to make further attempts for the fulfilment of the legitimate demands of Tuberculosis workers and the improvement of service conditions of medical officers under the Government of West Bengal.

KANPUR BRANCH -The annual general meeting of the branch was held on 10-2-57. Office-bearers for 1957 were elected with Dr. Major Bishan Singh as president, Dr. K. P. Mehrotra as hony. secretary and Dr. S. R. Bajpai as hony. joint secretary. The annual report of the branch for 1955-56 showed that membership rose from 176 to 211 during the year. Twenty-eight meetings were held, of which 9 were clinical meetings. Eleven executive committee meetings were held. Foundation Anniversary, Republic Day and Independence Day were celebrated.

KRISHNAGAR BRANCH—A meeting of the branch was held on 20-1-57. The members condoled the untimely death of Dr. S. P. Chatterjea, one of the founder members of the branch.

KOTHAGUDIUM BRANCH—During the inauguration of the annual health week, Col. T. C. Ramchandani, Chief Surgeon and M.O. spoke on the health problems in Kothagudium. He reviewed the progress made in the control of malaria, small-pox, and cholera. He also referred to the infection of Hookworm, V. D. and Tuberculosis which required serious attention. He said "The population question is now causing serious concern in India. A curb is thought essential. The objective behind all our national plans is the raising of the standard of living. This cannot be successfully done if the population growth outstrips the production of food and other essentials and the increase in social services.

MADRAS CITY BRANCH—The annual report of the branch for 1955-56 shows that 60 new members were enrolled during the year. During the year 5 special general body meetings, 7 executive committee meetings and 9 clinical meetings were held.

The 21st annual general body meeting of the branch was held on 7-1-57 with Dr. R. Sankaran in the chair. The members condoled the death of Dr. R. Sabapathy. The annual report, the statement of accounts and the proposed budget were presented. The report was passed with an amendment. The resolution of the executive committee regarding nominations of presidents and vice-presidents was passed. Dr. R. Sankaran was elected the president, Dr. G. Ramchandramurthy and Dr. B. Rama Rao, hony. secretaries. Other office bearers and also members of the Executive Committee, Central Council and State Council were elected. The acquisition of a plot of land for Rs. 15,000/- as recommended by the Executive Committee was approved. The members were requested to contribute liberally towards the acquiring of a building of the association.

A meeting of the branch was held on 18-1-57 with Dr. R. Sankaran in the chair. Dr. Zorini of Forlanini Institute, Rome, a delegate to the 14th International Tuberculosis Conference Delhi spoke on "Chemoprophylaxis of Tuberculosis" and Dr. Crafton, Professor of Tuberculosis, Edinburgh who also attended the T. B. Conference as a delegate spoke on "Problems in Chemotherapy in Tuberculosis". Dr. Sankaran thanked the speakers.

On 22-1-57, two more delegates of the International Tuberculosis Conference addressed the members. Prof. Dr. Freeksen of Hamburg spoke on the general line of treatment of Pulmonary Tuberculosis. Prof. Wallgren of Sweden spoke on Evaluation of Prognosis in Childhood Tuberculosis.

An Executive Committee meeting was held on 7-2-57. Routine business was done.

On 22-2-57, Prof. Wilder Penfield, Director of the Montreal Neurological Institute, Canada spoke on "Focal Epilepsy". Dr. R. Sankaran was in the chair.

On 25-2-57, an urgent meeting of the executive committee was held with Dr. R. Sankaran in the chair. The discussion was mainly on the purchasing of a plot by the Association for constructing its office.

MADRAS STATE BRANCH—The quarterly meeting of the State Council was held on 20-1-57 in Erode under the auspices of the Erode branch. Twentyfive doctors were present. A joint clinical session of Coimbatore and Erode branches was held in the evening with Dr. T. V. Sivanandam in the chair. Dr. P. Venkat Rao, Chief Surgeon, Father Muller Hospital, Mangalore spoke on Some Emergencies met with in general surgical practice and their treatment. Dr. P. K. Kalyanaramon spoke on "Refractory Cardiac Failure and its treatment". One hundred and fifty doctors were present.

MADURA BRANCH—Office-bearers for 1956-57 were elected with Dr. K. Balakrishnan as president and Dr. K. A. Ramlingam as hony. secretary.

MANDYA BRANCH—A clinical meeting of the branch was held on 23-2-57 with Dr. M. Krishnamoorty Rao in the chair. Dr. H. V. Suryanarayanarao, E.N.T. specialist, K. R. S. Hospital, Mysore, spoke on Vertigo.

The clinical meeting of the branch was held on 16-3-57 with Dr. Marle Puttaiya in the chair. Dr. F. I. Tovey of Mission Hospital, Mysore, spoke on Peptic Ulcers.

MEERUT BRANCH -A general meeting of the branch was held on 27 January, 1957, with Dr. Suraj Bal in chair. A case of Ono-antral Fistula was demonstrated by Dr. R. S. Seth, E.N.T. specialist, P. L. Sharma Hospital. Dr. K. K. Sikka of P. L. Sharma Hospital, spoke on "Tropical Eosinophilia", which was appreciated by the members.

MORVI BRANCH—A meeting of the branch was held on 3-3-57. A symposium on "Pyrexia of Unknown Origin" was held. Drs. D. G. Dave, H. M. Shah and S. V. Baxi participated.

MYSORE BRANCH—A clinical meeting of the branch was held on 19-1-57. Dr. A. K. Gopalarajan presided. Dr. M. Sreenivasan spoke on "The Effect of Some Proteins on Glucose Tolerance in Certain Hyperglycaemic Cases".

A course of lectures and demonstrations in various specialities were arranged at Mysore as Refresher Course on 21-29 January 1957. It was inaugurated by Dr. Y. Appajee, Principal, Unidersity Medical College, Mysore. Twenty-six doctors from various places attended the function.

An Extrordinary general meeting was held on 9-2-57. Dr. K. Ramasastry was elected to the steering committee of the Mysore State Medical Association. A clinical meeting was also held on the same day. Dr. A. K. Gopalarajan presided. Fortytwo members were present. Dr. F. I. Tovey demonstrated a case of Brodie's Abscess and reported cases of (1) Dermatomyositis, (2) T. B. Caecum and demonstrated some x-ray films. Dr. Mr. Basavaraj Urs demonstrated a case of Infective Hepatitis with varying clinical pictures.

A memorandum regarding the grievances and demands of the L.M.P. doctors has been circulated. The just claims of the L.M.P's have been put forward. The government was requested to admit the genuine claims

of L.M.P's and to revise the scales of pay of the L.M.P. doctors similar to the Madras scale of pay.

NIZAMABAD BRANCH—A clinical meeting of the branch was held on 28-3-57 with Dr. S. N. Mathur in the chair. Twenty members were present. Dr. S. N. Mathur demonstrated some cases in the Civil Hospital.

A clinical meeting of the branch was held on 26-2-57 with Dr. S. N. Mathur in the chair. He demonstrated some interesting cases.

PANDUA THANA BRANCH—A conference of medical men of Pandua Thana in the district of Hooghly was held on 3-2-57. Dr. N. K. Munsi presided. The conference discussed the various issues concerning public health, the future set-up of the health services in West Bengal, under-employment and employment amongst the rural medical practitioners and retrenchment of medical examiners serving under the Life Insurance Corporation. Dr. S. Raichaudhuri, Hony. Provincial Joint Secretary, IMA, Bengal Provincial Branch, Dr. S. Banerjee, president of Panduathana branch and Dr. N. K. Munsi were amongst those who spoke.

PATHANKOT BRANCH—A joint meeting of the Gurdaspur and Pathankot branches was held on 24th March, 1957. Capt. Hari Gopal, President Pathankot branch presided. 30 members attended. Dr. H. R. Khera spoke on Corticosteroids and their use in clinical practice. And Capt. M. L. Balaggan gave an interesting talk on Family Planning.

PORBANDAR BRANCH—A special meeting of the branch was held on 21-2-57. Dr. H. H. Chavda presided. Thirteen members were present. Dr. Chavda accorded welcome to Dr. R. P. Vyas, Chief Medical Officer, Junagadh on a visit to the place in connection with the Provincial Conference to be held at Junagadh. Dr. Vyas invited members to attend the conference at Junagadh and requested them to become members of the Reception Committee.

A meeting was held on 17-2-57. Ten members were present. The branch selected its nominee for the presidentship of the Gujarat and Saurashtra Provincial Conference. Films on Planned Parenthood, Drums of Manipore and Good Manners were shown.

RAMNAD BRANCH—The annual meeting of the branch was held on 10-2-57. Dr. T. V. Venkatesan spoke on "The Diagnosis and Management of Skin conditions in general practice". Office-bearers for 1956-57 were elected with Dr. R. Venkatachari as president and Dr. S. Radhakrishnan as hony. secretary.

A meeting of the branch was held on 24-3-57. Dr. R. Venkatachary presided. Dr. K. Bhaskara Rao spoke on "The Diagnosis and Management of Menstrual Disorders".

SALEM BRANCH—The annual general meeting of the branch was held on 31-3-57. Office-bearers were elected with Dr. S. R. Rajaram as president. Dr. S. Arthanari as hony. secretary and Dr. T. Narayanaswamy as hony. joint secretary.

SHILLONG BRANCH—A meeting of the branch was held on 8-3-57 to welcome Dr. P. V. Benjamin, President of the International Tuberculosis Conference and Adviser in Tuberculosis to the Government of India. Dr. Benjamin spoke on the Modern Concepts of Tuberculosis Control and discussed the tuberculosis scheme in the II Five Year Plan, viz., (1) Mass B.C.G. Vaccination, (2) Establishment of Clinics, (3) Isolation Hospital, (4) Demonstration Centres.

SHIMOGA BRANCH—A meeting of the branch was held on 9-2-57. Dr. B. N. Rajagopal presided. Dr. D. Krishna Murthy spoke on his experiences of the 33rd All-India Medical Conference held at Trivandrum. The following subjects were discussed, (1) A case report of diabetes insipidus by Dr. B. R. Sharma Rao, (2) Demonstration of a case of fracture of the skull with unilateral facial palsy and bilateral deafness by Dr. A. S. Kantharaja Setty, (3) Report of a case of myeloid leukaemia by Dr. B. S. Narayana Rao, (4) Some medico-legal aspects of alcoholic intoxications by Dr. D. Samanna and Dr. C. Krishnachary.

A meeting of the branch was held on 9-3-57 with Dr. D. Shamanna in the chair. The following subjects were discussed, (1) Rural Medical Aid by Dr. M. Sham Rao, (2) Case Reports by Dr. Shamanna on (*a*) Perforated Gastric Ulcer (*b*) Broken Needle. A case of Thyrotoxicosis with pregnancy was demonstrated.

SINDRI BRANCH—A general meeting of the medical practitioners of Sindri was held on 13-2-57 with Dr. S. S. Shluwalia in the chair. The Sindri branch of IMA was formed with Dr. S. S. Shluwalia as president, Dr. L. P. Choudhury as hony. secretary, Dr. R. S. Bhagat and Dr. P. K. Bagchi as hony. joint secretaries.

SUPAUL BRANCH—A meeting of the branch was held on 15-2-57 with Dr. A. Haque in the chair. Six members were present. A Health Week Committee was formed. A case of Massive Pleural Effusion was presented by Dr. A. Haque.

A meeting of the branch was held on 9-3-57 with Dr. N. P. Mukherji in the chair. A programme was chalked out for the local Health Week celebrations. A case of purpural rashes due to Kala-Azar was represented by Dr. S. S. Prasad.

TENALI BRANCH—A meeting was held on 17-11-56. Lt.-Col. P. Papatla of Orissa spoke on "Common Diseases of the Eye". Dr. N. Umamaheswara Rao of Guntur medical college spoke on Salk Vaccine. Dr. C. Krishnaiah demonstrated a case of "Omphalocele". Dr. B. Pullayya read a case report of "Internal Hernia, paraduodenal variety"

A meeting was held on 20-1-57. Dr. C. Sivaramasastry spoke on "Pitfalls in Cataract Surgery".

A meeting was held on 24-2-57. The president congratulated Dr. B. Pullayya for getting the gold medal for his paper on "Anaemias of Pregnancy". Dr. K. Veerayya demonstrated a case of Beri Beri. Dr. V. Sundararamaiah spoke on Electrocardiography and Cardiac Arrhythmias.

A meeting was held on 8-3-57 to discuss the site for the building of the association, granted by the government.

A meeting was held on 31-3-57. Dr. B. Naganna of Guntur Medical College spoke on "A general review of Biochemical Tests with special reference to body fluids". A case of occasional dyspnoea in a child of 3 years presented by N. V. Krishna Rao was examined and discussed by the members.

TIRUCHY BRANCH—A meeting of the branch was held on 16-2-57. Fifty members were present. Dr. V. N. Patvardhan of Coonoor spoke on "Nutrition in Medicine and Public Health".

TRAVANCORE-COCHIN STATE BRANCH—The annual report of the branch for the year 1955-56, shows that membership increased by 17 during the year. Five meetings of the Provincial Council were held. Memorandum for revision of pay of Medical Officers in the State, to the Government and also a memorandum to the University and Government on Medical Education were submitted.

UDAIPUR BRANCH—A general meeting of the branch was held on 23-1-57 with Dr. R. N. Sachdeva in the chair. Twentyfour members were present. The members were requested to donate Rs. 10/- towards the building fund, Central Office.

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